Building Services News

Volume 59
Issue 6 *November/December*

Article 1

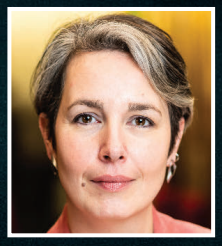
11-2020

BS News November/December

building services engineering

CIBSE Benevolent Fund

Paul Martin



Renovation must include lighting

Ourania Georgoutsakou

DCU LED lighting retrofit

Stephen Weir

Fields of Life appeal

Alex Gason

Also in this issue

- Your 2021 wallplanner

RADIATORS

Think design before installing

MITSUBISHI ELECTRIC

Cooling | Heating | Ventilation | Controls

Experience

R32 HYBRID VRF

The heating and cooling solution for every environment

With all the benefits of a VRF system and the water-based performance of a chiller, Mitsubishi Electric's latest Hybrid VRF models use lower GWP refrigerant R32. Already installed in a variety of commercial building types in Ireland over the past five years, R32 Hybrid VRF provides a future proof design solution.

- ✔ No refrigerant in occupied spaces
- ✔ No leak detection
- ✔ Low running costs
- ✔ Maximum efficiency

MITSUBISHI ELECTRIC

LIVING ENVIRONMENTAL SYSTEMS

Email: sales.info@meir.mee.com Tel: +353-1-419 8800

www.mitsubishielectric.ie

www.facebook.com/buildingservicesnews/

Contents

EDITORIAL

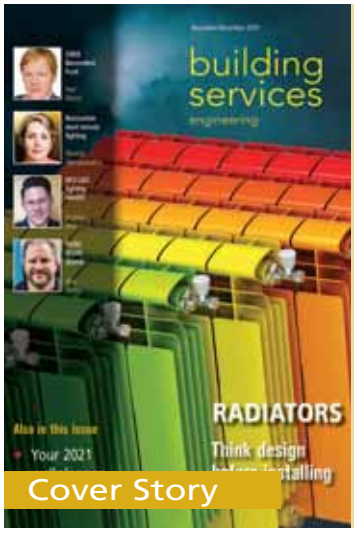
Resilience heralds optimism for 2021

While other industry sectors, especially hospitality, have taken a battering from Covid-19, construction – and by extension building services engineering – have underpinned Ireland's economy over the last nine months.

Admittedly, there was a slight blip early on but, once sites reopened after the initial total lockdown, it has been all systems go. If anything, most of the sector has been operating at a frenetic pace for much of this time, fuelled in part by Covid-related projects, in addition to pressurised timelines as a consequence of Covid.

The impact of Covid will undoubtedly continue into 2021, though the prospect of relief from a vaccine is much closer. However, construction has already demonstrated its resilience and its determination to persevere, and indeed to lead Ireland's recovery.

So, let's look forward to 2021 with optimism.



Cover Story

24

Correct radiator sizing is critical to system performance, regulation compliance and grant approval. *Technical Guidance Document (TGD) L Dwellings 2019* is the perfect place for designers and installers to start.

Published by: Pressline Ltd, Carraig Court, George's Avenue, Blackrock, Co Dublin.
Tel: 01 - 288 5001/2/3 email: pat@pressline.ie
web: www.buildingservicesnews.com
Publisher and Editor: Pat Lehane
Design and Production Editor: John Gibney
Advertisement Director: Joe Warren
Design: Pressline Ltd.
Printed by: W&G Baird
ISSN 2712-0198

AECI AWARDS

42

Varming winner

Varming Consulting Engineers has won the prestigious 2020 ACEI Design Excellence Award in the Mechanical and Electrical Category for work on the Three Park Place project, which is the latest completed building of the Park Place Office Complex, on Hatch Street, Dublin 2.

LED RETROFIT

58

DCU excellent exemplar

While the theory and rationale behind LED retrofitting is well-established and much-debated, there is far less information published on the practicalities of carrying out such projects. Stephen Weir of McKeon Group gives a walk-through of the DCU project.

NEWS AND PRODUCTS

Apprentice intake up at Kirby

Kirby Group Engineering has taken in 80 apprentices for its 4-year programme in 2020, despite the challenges for the economy posed by the coronavirus pandemic.

The Kirby Apprenticeship Programme provides recruits with structured technical training, graduated practical work challenges, coaching and mentoring and structured personal development and support. Many Kirby apprentices have competed successfully at international level.

A1 apprentices Paul Lynam and Vincent Mulvihill with Mark Flanagan, Kirby Group MD and A1 apprentices Calum Joyner and Lee Kilroe.

Applications are now open for the 2021 Kirby Apprentice Programme, and demand is being monitored by the company, with a view to possibly expanding intake once again. The company is looking for bright, action-oriented, analytical candidates who are interested in how and why things work and who are practically-minded.

See www.kirbygroup.com

Baxi CPD seminars

Baxi Potterton Myson is rolling out a series of online CIBSE-accredited CPD webinars to help building services professionals update their knowledge and keep their CPD records up to date. The CPDs offered include:

- Bespoke prefabricated heating solutions;
- Heat networks;
- Maximising CHP efficiency and savings;
- Hot water generation for commercial and industrial applications;
- Unvented hot water systems;
- Installed drinking water products.

To book a course email commercialmarketing@baxiheating.co.uk

For expert advice on the heating and hot water system of a particular project contact Richard Louth, Baxi Potterton Myson. Tel: 086 – 257 5241; email: richard.louth@potterton-myson.ie

EDF acquires Wexford Solar

EDF Renewables (EDFR) continues to invest in Ireland by acquiring Wexford Solar Ltd which includes eight solar projects with around 100MW of capacity across the country. It recently bought 50% of the Codling offshore wind farm, partnering with Fred Olsen, and will open a new office in Dublin.

Four of the Wexford Solar projects are consented and have been successful in the recent RESS 1 auction. These are Blusheens (11.5MW), Coolroe (7.4 MW) and Curraghmartin (5.7 MW) which are all in Co Wexford, plus Stamullen (5.8 MW) in Co Meath. EDF Renewables plans to build these projects in 2021.

Four other projects are in the development phase. These are Ballycarren (6 MW) in Co Wexford, Willville (5.7 MW) in Co Louth, Johnstown (15 MW) in Co Carlow and Athlone (45MW) in Co Roscommon.

Pictured is Matthieu Hue, CEO, EDF Renewables Ireland.

Hevac and Arbonia partnership

Hevac recently entered a partnership with Arbonia Group AG to promote and supply a full commercial radiator, radiant panel and trench heating product portfolio to the heating market in Ireland.

Established in 1874 in Arbon, Switzerland, the Arbonia Group has an annual turnover of circa €1.1 billion and is active in more than 70 countries worldwide.

Hevac will promote its full product portfolio under the Arbonia umbrella with a particular focus on the Decotherm and Arbotherm 1.5mm thick steel tubular commercial radiator products, radiant panels and tubes, trench heating and LST radiators.

Garrett White, Managing Director, Hevac.

"This partnership brings a real alternative to the commercial radiator and radiant panel market," says Garrett White, Managing Director, Hevac. "With quick production and delivery times, a professional specification-driven service and an unrivalled product range, Arbonia perfectly complements our existing portfolio of innovative HVAC solutions."

Contact: Paul Devereux, Hevac Specification Manager. Tel: 086 – 173 8060; email: paul.devereux@hevac.ie

YOUR IDEAL SOLUTIONS PARTNER, TRUST WILO.

www.wilo.ie

Your ideal partner for the future of pump technology - Wilo have what it takes as a manufacturer who can truly understand the many applications of our products in real-world situations. Staying abreast of Global Megatrends enables us to develop products which are ready for the challenges of tomorrow. Digitalisation and efficiency play a huge part in a world which will increasingly be dominated by smart urban areas in order to cope with the demands of globalisation and urbanisation.

T: +353 (0)1 426 0000 | E: sales.ie@wilo.com

IE5

Glandless Circulators
Wilo-Stratos MAXO

Glanded Circulators
Wilo-Stratos GIGA

Boosters
Wilo-SiBoost Helix EXCEL

Drainage & Sewage
EMUport CORE

Published by ARROW@TU Dublin, 2020

Pioneering for You

NEWS AND PRODUCTS

Clever Clevernet

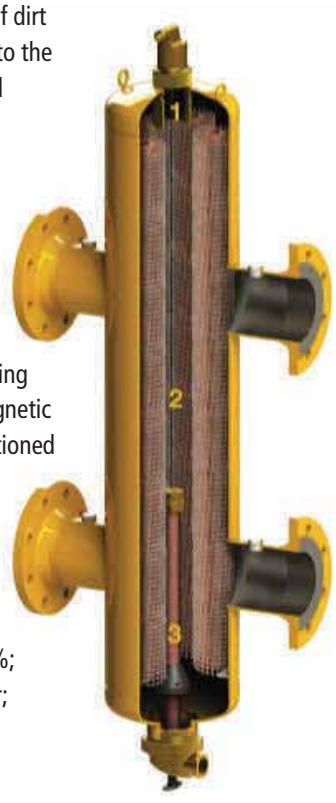
Clevernet, a recently-established Irish start-up, offers a suite of innovative services based on the deployment of wireless technology and AI over a unique software platform to provide clients with a far greater level of energy use control and efficiency. It enables building owners to make informed changes in relation to their building systems and energy consumption, to reduce their energy spend, and successfully reach sustainability objectives.

All Clevernet services can be managed through a management dashboard called Kernel which will capture and report key KPIs such as a building's carbon levels, energy reduction, occupancy data, fault detection and internet connectivity.

"We are now ready to offer our new software to the market. This represents a significant new departure in the management of office buildings, hotels and other premises covering crucial areas such as energy use, occupancy and telecommunications connectivity," said Shane Deasy, founder and CEO of Clevernet (pictured).

Hydraulic balancing from Euro Gas

Hydraulic balancing, the removal of dirt and the deaeration of system water is vital to the performance of energy-efficient heating and cooling systems with multiple circuits. Over a period of time free air, air bubbles and contaminants cause corrosion and disrupt throughflow.



The new SpiroCross XC-M 3-in-1 from Euro Gas offers the perfect solution. It consists of a hydraulic balancer housed in a robust steel casing, a deaerator for removing air bubbles and free air, and a powerful magnetic dirt separator. The drainage tap can be positioned as desired (360°), making it easy to remove dirt and magnetite, while the system remains in operation.

Areas of application include low-temperature systems; light commercial applications; glycol/water systems: max 50%; temperature 0°C - 110°C; pressure < 10 Bar; Maximum flow 1.5 m/s.

Contact: Euro Gas. Tel: 01 – 286 8244; email: sales@eurogas.ie; www.eurogas.ie

Size-it with Andrews

Size-it is Andrews Water Heaters' professional water heater sizing tool. It has been designed with building consultants' needs in mind, and is user-friendly, very informative and available on any device.

Size-it can be used to tailor the size of water heaters to the exact requirements of the property. Its comprehensive database means the consultant can select the different elements within a property type and calculate the hot water requirements. It can also be used to manage a portfolio of projects.

Size It will recommend the most suitable Andrews Water Heater products for the job, along with a detailed summary report, and all the technical and up-to-the-minute legislative information required to complete a hot water schedule. It can be down-loaded at www.sizeit.co.uk.

Further details from Richard Louth, Baxi Potterton Myson. Tel: 086 – 257 5241; email: richard.louth@potterton-myson.ie

ISH 2021 to go digital

Messe Frankfurt has already made the decision to hold ISH 2021on an exclusively digital basis so that intending participants have sufficient time to design and implement attractive digital presentations.

Wolfgang Marzin, President and CEO of Messe Frankfurt, assures all exhibitors that they will be able to participate, including those who had decided not to take part in a physical ISH.

ISH 2021 will take the form of a purely digital event and will also offer a wide variety of interesting features including, for example, exhibitor presentations (products, specifications, videos, contact persons, chat function, one-to-one video calls), as well as intelligent, AI-aided matchmaking with suitable business contacts for lead generation.

Additionally, there will be live streams and on-demand transmissions of the programme of events, as well as an appointments system for online meetings with exhibitors. All features will be available worldwide during the event, around the clock and across all time zones.

See www.ish.messefrankfurt.com

AQUARIUS®

Guaranteed Irish
All together better

2-YEAR WARRANTY

Calpeda Aquarius® Tank System

Features and Benefits

- Very quiet operation (48DB)
- Ideal in areas where mains pressure is low or inconsistent
- Certified for use with drinking water
- Over 30 different pump options
- Jacketed motor technology
- Dry-run protection built in as standard
- Pressures up to 12 Bar and flow of 183 litres / minute
- Forty different water tank size options (100lt to 2000lt)
- Pressure control options
- Outlet drain connections of 11 / 4" and 1" fitted as standard
- Tanks can be inter-connected for larger storage capacities
- All units fully leak and pressure-tested, and certified

"Calpeda Aquarius, the Irish designed and manufactured tank system, meets the demand for a self-contained, integrated pump and water storage solution."

Calpeda Pumps Ireland Ltd
Unit 5 Old Quarry Campus
Northwest Business Park
Phase 3
Blanchardstown, D15 Y4EK
Tel: 01- 861 2200; email: info@calpedaireland.com

NEWS AND PRODUCTS

Climate change researchers challenged

An international survey of more than 1,400 university researchers has found that climate change researchers, especially professors, fly more than other researchers. The study was carried out by the UK Centre for Climate and Social Transformation (CAST), which is coordinated by Cardiff University.

Professor Lorraine Whitmarsh, Director of CAST (left) who led the study, said: "Our findings highlight that climate scientists, like many other professionals, can struggle to square their environmental commitments with competing professional and personal demands, and academia itself is not doing enough to change this culture."

"Crucially, our research demonstrates the need for policies and ways of working to encourage and enable low-carbon travel and the use of virtual alternatives."

UN role for Irish climate scientist

Dr Tara Shine has been appointed as co-facilitator of the Structured Expert Dialogue of the Second Periodic Review under the United Nations Framework Convention on Climate Change (UNFCCC).

The Structured Expert Dialogue is a science/policy discussion forum as part of the periodic review of the long-term goal to hold global temperature rise to well below 2°C, aiming for 1.5°C. It will also assess progress towards the goal and identify challenges and opportunities for achieving it.

Dr Shine is Director of Change by Degrees and Chair of the International Institute for Environment and Development. She said; "I look forward to co-facilitating this dialogue between scientists and policy makers. Our work together will assess the progress made to achieve the 1.5°C goal, and the opportunities we have today to provide a safe climate system for future generations."

Bluezone Technologies Legionella control

Newry-based built environment software experts Bluezone Technologies has developed a Legionella management system to facilitate 'round the clock monitoring and control of Legionella and waterborne bacteria. The "no touch" system consists of BluezoneTemp and BluezoneFlo, which sit on the company's Internet of Things (IoT) platform Bluezone24.

Explaining how Bluezone24 works, Adrian Byrne, CEO (above) said: "At a minimum, BluezoneTemp captures daily temperatures and transmits the data to the cloud-hosted Bluezone24 platform. Property and facilities managers can clearly see out-of-range temperatures and can plan any remedial work they may need to carry out." See www.bluezone24.com

FlowStop 24-hour leak detection

Andel FlowStop is an automatic mains water shut-off system, ideal for residential customers, landlords and property agents, student accommodation, hotels, offices and commercial premises.

It monitors the water supply and automatically shuts it off in the event of unusual flow activity, or a temperature drop and the risk of freezing pipes. FlowStop also has the option to add leak detection sensors in vulnerable areas such as kitchens, utility rooms, bathrooms, etc.

Contact: Rebert Gilbert, Manotherm. Tel: 01 – 452 2355; email: robert@manotherm.ie; www.manotherm.ie

TIDL 'Excellence in Safety'

The 'Excellence in Business' Awards to Local Government and PPP are awarded to companies who demonstrate outstanding service, continuity, track record and general excellence in business to the public, fire protection, noise control products and installation sectors. "I was delighted to accept this award on behalf of TIDL. Congratulations to all my colleagues for their outstanding and continued commitment, especially in these current Covid-19 times," said Denis McGill, TIDL (pictured).

NEWS AND PRODUCTS

Shannon Free Zone expansion

Shannon Commercial Properties, a Shannon Group company, is continuing its expansion plans at Shannon Free Zone with its latest development, a new 54,000 sq ft building on track for completion by the end of this year. The new building is part of a larger development of three signature buildings that extend to 148,000 sq ft of modern high-grade logistics, R&D, advance technology manufacturing space located on a 12-acre site.

Artists impression of the new building at Shannon Free Zone.

The new building offers excellent flexibility to meet occupier needs and can be split into units of 18,000 sq ft/ 36,000 sq ft, or let in its entirety. In line with Shannon Commercial Properties' ethos of sustainability, electric vehicle charging points and bike shelter parking are being provided as part of this development.

The two other buildings in the development, which together extend to approximately 94,000 sq ft, have recently been committed to by clinical-stage gene therapy company MeiraGTx.

Likely joins Kerrigan/Midland

Aiden Likely has joined Kerrigan Mechanical/Midland Heating & Plumbing Ltd as Operations Manager. Aiden has over 30 years' experience in mechanical contracting at senior management level and has been involved in pre-qualifying, tendering, value engineering, project and contract managing, commissioning and handover of projects nationwide.

Project types include hotels, hospitals, office blocks, leisure and tourism, production facilities, food processing plants, colleges and schools, as well as numerous single and multi-dwelling residential developments.

Having graduated from DIT with a degree in quantity surveying, he joined the family business, James Likely Ltd, and worked alongside his late brother Jimmy as General Manager. In 2010 he joined Heat Merchants Group, and became Regional Manager, bringing strong experience to that role.

He has now come full circle, returning to the sector which was his original calling, and is looking forward to renewing acquaintances and forming new professional relationships and friendships.

Contact: Aidan Likely, Kerrigan Mechanical. Tel: Tel: 046 – 943 0529; Mobile: 087 – 935 4854; Email: aiden@midlandheating.ie

Guidewire appoints Sonica

Sonica has been appointed the commercial fit-out provider for Guidewire's new five-storey, 80,000 sq ft office building at Stemple Exchange, Blanchardstown, Dublin 15. Since establishing a presence in Ireland in 2011, Guidewire's Irish base has expanded rapidly and the multi-disciplinary Dublin team now plays a key role in transformative programs for insurance companies around the world.

Donnacha Neary, Managing Director, Sonica said: "We are proud that Guidewire has trusted us to deliver this fit-out. We see ourselves as an innovative contractor that goes above and beyond to offer best-in-class, comprehensive end-to-end services. We're looking forward to working with Guidewire to deliver an inspirational workspace."

The new office space is set to be completed in March 2021 with other works being completed by CBRE and Coady Architects.

Poul Due Jensen new Grundfos CEO

Poul Due Jensen has been appointed Chief Executive Officer of Grundfos. He has been an invaluable member of Grundfos since the turn of the millennium and, since 2015, has been a central part of the Group Management. Poul's global experience, strong results, leadership qualities and values were key to his getting the position.

"Grundfos is in excellent shape," says Due Jensen. "We have a well-defined and ambitious strategy, strong management and fantastic employees who are focused on doing their best. In a challenged global economy impacted by the COVID-19 pandemic, we have major tasks ahead in the short term, but at the same time we must look ahead.

"I look forward to further developing Grundfos' global leadership position within the water and pump solutions sector, as well as contributing to solving the world's overall water and climate challenges."

MITSUBISHI HEAVY INDUSTRIES
AIR CONDITIONING & WATER HEATING

MITSUBISHI? GO HEAVY.

SPLITS

MHI offer 3 ranges, each with increasing specification and efficiency levels. Using inverter driven systems operating on R410A and R32 there is a huge range of indoor units available from stock, offering a variety of solutions for every installation.

MULTI-SPLITS

MHI Multi-splits allow you to mix and match up to 6 indoors with one outdoor, different style, different duty. Total flexibility at a great price!

LOYALTY

MHI genuinely rewards loyalty with dedicated support staff, specification support and project design. We also offer full training, branded workwear and 7 year warranty covering Splits & VRF through our 3 Diamond Dealer & 3 Diamond Partner schemes.

WARRANTY

With a 5 year warranty as standard, MHI offers 7 year warranty if you become a 3 Diamond Dealer or Partner.

dwg
MITSUBISHI HEAVY INDUSTRIES Air Conditioning

Available from DWG

Shop online www.dwgeire.ie

'éire' conditioning & refrigeration supplier

Official Distributor of Mitsubishi Heavy Industries Air Conditioning Europe

Scan the QR code and subscribe to our mailing list to keep up to date with all our latest news, products and special offers.

RESEARCH DEVELOPMENT

Verification of inhibitory effect of nanoe™ X

Panasonic has announced that, in collaboration with Texcell*[1], the global contract research organisation, Texcell has verified the inhibitory effect of the nanoe™ X, technology with the benefits of hydroxyl radicals on the novel coronavirus (SARS-CoV-2).

nanoe™ X, the original ionizer to generate "nano-sized atomised water particles" is developed by Panasonic. It is an electrostatic atomisation technology, that collects invisible moisture in the air and applies high voltage to it to produce "hydroxyl radicals contained in water". The decisive factor is the existence of hydroxyl radicals inside nanoe™ X. Hydroxyl radicals are characterized by being strongly oxidative and highly reactive.

Panasonic has been conducting research on this technology since 1997, and has verified its effectiveness in a variety of areas, including inhibiting certain pathogenic microorganism (bacteria, fungi, and viruses) and allergens, breaking down PM 2.5 components that have adverse effects on the human body*[2].

In 2012, Panasonic conducted a virus clearance test with a third-party organisation and confirmed the effectiveness of each of the four categories in terms of biological characteristics. Based on this result, Panasonic announced that "hydroxyl radicals contained in water" technology could be expected to have an inhibitory effect on new viruses*[3].

The novel coronavirus (SARS-CoV-2) of the current global pandemic is one such new type of virus and testing with Texcell has now confirmed that the nanoe™ X does have an inhibitory effect on this virus. This testing was carried out in a closed laboratory environment and was not designed to assess its efficacy in uncontrolled living spaces.

Panasonic will continue to pursue the potential of nanoe™ X technology to address possible risks associated with air pollution such as new pathogenic microorganisms, with the aim of creating cleaner environments for people around the world.

For reference

Testing of inhibitory effect of nanoe™ X on the novel coronavirus (SARS-CoV-2)

Overview

A comparative verification was conducted in a 45L test space containing the novel coronavirus (SARS-CoV-2) with and without exposure to nanoe™ X.

Results

Over 99.99% of novel coronavirus (SARS- CoV-2) activity was inhibited within 2 hours.

Note: This verification was designed to generate basic research data on the effects of nanoe™ X on the novel coronavirus in laboratory conditions different from those found in living spaces. It was not designed to evaluate product performance.

Methodology and data

Organisation: Texcell

Subject : Novel coronavirus (SARS-CoV-2)

Device nanoe™ Xdevice

Method:

– nanoe™ X device is installed at 15cm from the floor in the 45L test space.

– A piece of gauze saturated SARS-CoV-2 virus solution was placed in a petri dish and exposed to nanoe™ X for a predetermined time.

– The virus infectious titer was measured and used to calculate the inhibition rate.

Results data

Test subject	Inhibition rate*	Capacity	Hours
SARS-CoV-2	99.99%	45L	2 hrs

Notes:

*1: Texcell is a global contract research organization that specializes in viral testings, viral clearance, immunoprofiling and R&D or GMP cell banking, for your R&D, GClP, GLP and GMP projects.

With more than 30 years of experience and roots within the Pasteur Institute in Paris, Texcell has a long recognized expertise in viral testing with a broad range of protocols for the detection of adventitious agents.

Texcell is the first spin-off of the Pasteur institute of Paris created in 1997.

*2: Main releases on verification cases

– May 12, 2009 Positive effects of charged water particles on viruses, bacteria, and agricultural chemicals have been verified.

– October 20, 2009 The new influenza virus inhibition effect of charged water particles has been verified.

– February 20, 2012 Suppression effect of charged water particles on pet-related allergens, bacteria, fungi, and viruses have been verified.

– January 16, 2014 Nano-sized electrostatic atomized water particles effectively breaks down PM2.5 components and inhibits growth of fungi attached to Yellow Sand.

*3: January 26, 2012: Virus suppression effect of charged water particles has been verified by the virus clearance test. Co-verified with Charles River Biopharmaceutical Services GmbH, a German testing organization

MEET THE NEW SPIROCROSS

INNOVATION THAT STICKS

Spirotech introduces the SpiroCross XC-M - the next generation of hydraulic balancing deaerators & dirt separators, in combination with unique magnetic field amplification technology. The combination of 3 functions in 1 saves on space, installation and maintenance costs.

Find out more at www.eurogas.ie

SPIROTECH

Maximising Performance for You

EURO GAS LTD.

Southern Cross Business Park,
Unit 38B, Southern Cross Business Park,
Boghall Road, Bray, Co. Wicklow
Tel: 01 – 286 8244 Email: sales@eurogas.ie

www.eurogas.ie

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

Wilo wins Best Energy Efficiency Award for Central Bank HQ

Wilo Ireland won the Best Energy Efficiency Award category for its work on the new Central Bank building at the recently-held inaugural German-Irish Chamber of Industry & Commerce awards. Despite being a virtual ceremony, the event was highly-successful.

The concept behind the awards is to introduce innovative and efficient energy solutions made in Germany, while providing a networking platform for German and Irish industry experts, company representatives and decision-makers. Five German companies were nominated and each showcased their technological achievements to the large virtual audience.

Derek Elton, Managing Director, Wilo Ireland and Mr Ralph Huysers, Wilo HQ, presented the case for Wilo's work on the new Central Bank building which is located in North Wall Quay in the Dublin Docklands. The sculptural profile of the building reflects the maritime setting and new civic identity of the dockland area. It is wrapped in a glass skin, which is shielded from glare and solar heat gain by an outer layer of anodized aluminium triangular mesh panels. Those panels contribute significantly to the overall energy performance by reducing the impact of solar heat and so also reducing the energy needed for heating and cooling.

The Central Bank headquarters is one of the first office buildings in Ireland to achieve the Building Research Establishment's Environmental Assessment Method (BREEAM) Outstanding rating at design stage. The building energy rating (BER) was targeted to A2, which equates to a 72% improvement in energy consumption over previous building regulation baselines. Effective insulation also reduces the energy consumption, with the environmental impact held on a low level by using energy from renewable sources.

Green Wilo pumps significantly contribute to the overall efficiency of the building, from heating and cooling to cold water supply and products for rainwater harvesting. "Central Bank campus is a green building, certified as the highest BREEAM 'Excellent level', the world's leading sustainability assessment method. One of our main requirements was to provide high-efficient pumps with efficiency class IE4 (which was the highest available at design stage) to ensure compliance with that BREEAM criteria," says Derek Elton. "The Wilo-Stratos GIGA series we used on the project is an electronically-controlled glanded single pump of inline design using EC motor technology for increased operation efficiency, while the Wilo-IL-E series was used for pumping the heating and chilled water systems."

For operation of the cold water applications, including rainwater harvesting, Wilo used the Wilo-SiBoost Smart 3 Helix EXCEL series. This compact high-efficiency pressure boosting system consists of vertically-mounted stainless steel high-pressure multistage centrifugal glanded pumps for which each pump has an integrated frequency converter for maximum efficiency. These packaged booster systems include a ready-for-connection stainless steel pipework base frame mounted and an automatic control system with all necessary measurement and adjustment facility. For reliable operation in the HVAC applications several Wilo-Stratos models were used.

Recently, Wilo Ireland was awarded the service contract for the new campus. "This highlights the holistic service Wilo Ireland provides," says Derek. "As a global specialist in pumps and pump systems, we offer a wide range of services to help our clients optimise and secure their processes. Caring about and helping them honour their sustainable objectives and regularity compliance obligations is part of that shared partnership."

Contact: Wilo Ireland. Tel: 01 – 426 0000; email: sales.ie@wilo.com

The Central Bank HQ building with (inset) some of the high efficiency variable speed pumps for the HVAC applications.

BAXI

Boilers and cylinders for any property, big or small

Fully in-tune with low-carbon legislation

Efficiency boosters, for extra cost savings

All boilers A-rated for efficiency

Easy to install, maintain and operate

BAXI Genuine Parts

17,000 genuine parts readily available

Extended warranties available

Intuitive comfort controls

Expert training

Rated 'Excellent' on Trustpilot

Baxi Assure, The Complete Home Service

The most comprehensive range of residential heating and hot water systems is here. We've put our in-depth knowledge of the building industry and reputation for product innovation into creating reliable, efficient and cost-effective solutions the housing market needs – for today, and tomorrow. Rest assured, the future of residential heating is in safe hands with us.

Call Baxi Potterton Myson on 00353(0) 1 4590870 or visit baxipottertonmyson.ie to find out more.

Take control with Xylem's compact clean water system

A new whole-house solution to delivering clean water is making life easier for installers, and changing the marketplace here in Ireland. The Aquabox offers a cleaner, faster installation than the traditional two-step approach, creating more space and much less noise once it is up and running. This innovative Irish invention is part of a suite of residential building services products offered by leading global water technology company Xylem.

Kevin Devine, General Manager of Sales at Xylem Water Solutions, Ireland, explains why more than 10,000 homes and businesses in Ireland are already benefitting from the Aquabox.

Save on space and bills – Xylem's Aquabox, designed in partnership with Southern Pumps specifically for the Irish market, is a self-contained system for transporting clean water with constant pressure that's ideal when space is at a premium. Built with developers, specifiers and installers in mind, it comes in a range of capacities up to 1100l, all fitted with a WRAS-approved Lowara Scuba submersible pump and Lowara Genyo pressure control and protection.

The fixed speed version has an adjustable pump controller with pressure sensors to deliver constant water pressure on demand. The variable speed version has an intelligent set-up that automatically controls the pump, starting it up and shutting it down in response to real-life-use data. This means the amount of power used reflects demand, leading to reduced energy consumption. Many customers have reported cutting their energy bills by up to 50%.

The Aquabox system ensures a smooth flow of water to every outlet by maintaining a constant pressure throughout the property, speeding up or slowing down the pump to prevent fluctuations. Another major benefit is its dry-run protection, meaning it recognises when tanks are empty due to water or power failure then, when pumps are operational, filling the system slowly to prevent damage or shock to fittings.

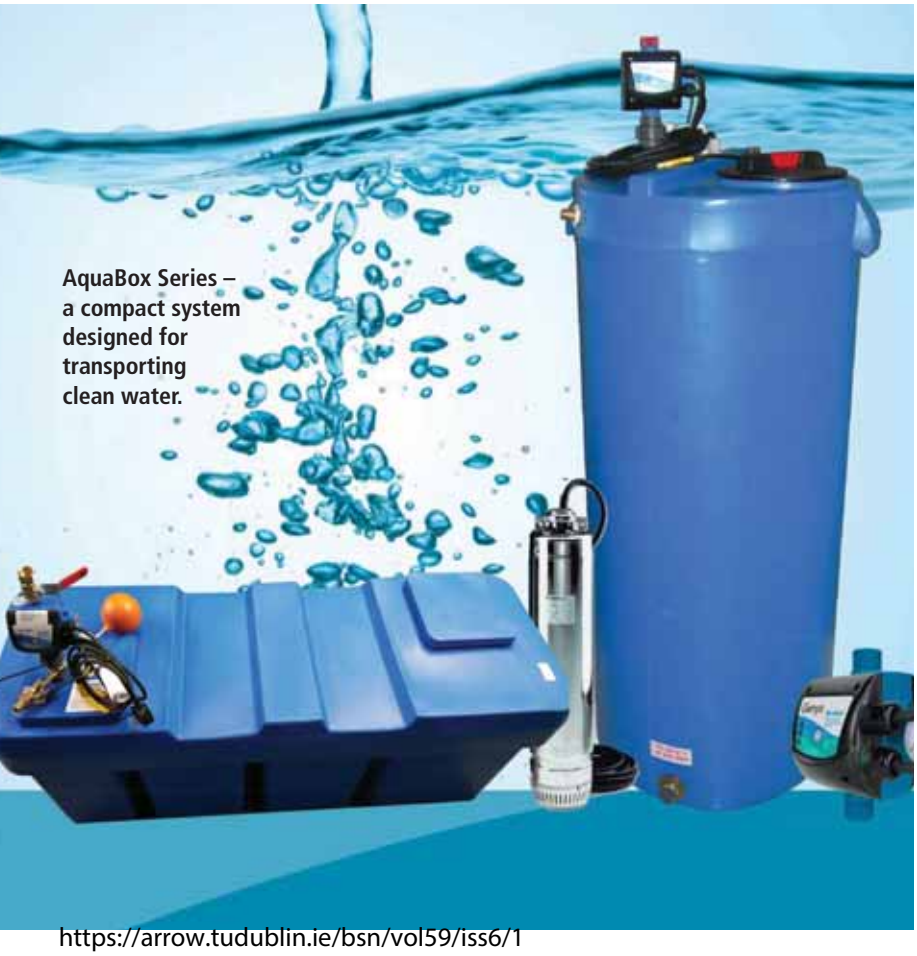
Futureproof solution – Installing the Aquabox is simple as the pump and pressure switch come fully wired, and the tanks are lightweight for easy transportation and installation. By removing the pressure of running at full speed 24/7, a variable speed system can increase the lifespan of the pump, reducing maintenance frequency. It is also virtually silent.

Aftercare is easier too, with an isolating valve fitted on the pressure switch outlet. This allows the homeowner to check the pump and pressure switch by simply closing the valve overnight to see if the pump kicks in.

Looking after customers – "We're proud of the work we do with Southern Pumps to provide a robust, intelligent and efficient system to transport clean water around the home," says Devine. "The Aquabox is the only unit on the market manufactured with every component approved for use with potable water. In addition, we have built a reputation for top-level customer support.

"We are now looking to adapt and customise the Aquabox for the UK market, as well as building our customer base in Ireland."

To find out more about Xylem's smart, compact solution to pumping water, visit www.xylem.com/en-uk." ■



AquaBox Series – a compact system designed for transporting clean water.

MasterTherm HEAT PUMPS

Heat pumps for commercial applications

The possibilities are endless

MasterTherm has a track record spanning 25 years of delivering high-performing commercial heat pump solutions. All commercial applications are catered for, irrespective of size. These include manufacturing, hospitals, office blocks, industrial buildings etc.

Design support

Apart from cutting-edge products and technology, MasterTherm works closely with consultants and contractors on each project to provide design support and product-selection advice.

Fast payback and nZEB ratings

MasterTherm solutions not only deliver fast payback on capital investment but they meet nZEB with ease on projects of all types.

Extensive capacity

If required, systems can produce several thousand kW of heat per hour. In addition, modular solutions to match heat requirements provide great versatility and reliability for many applications.

Online comfort control

All MasterTherm heat pumps can be connected to the internet to allow full monitoring of heat pumps online. Room temperatures, water temperatures and operating parameters can be monitored and altered remotely.

Flexibility for every building

MT heat pumps come in all variations – compact monobloc; split; indoor split; low or high temperature. All technical, space or visual requirements are always satisfied.

Intelligent plant room controls

Control systems can control the entire plant room, including heating/cooling circuits, aux heat sources, mixing valves, etc. It can also be conveniently connected to the building management systems via Modbus or BACnet.

> Bespoke heat pump systems that last

MasterTherm ltd
Premier Business Park,
Ballycoolin, Co Dublin,
D11 X576.
Tel: 01 – 899 1721
Email: info@mastertherm.ie
W: www.mastertherm.ie

Specialist support for commercial heating and hot water systems

When it's time for a consultant to start thinking about heating and hot water for the commercial project they're working on, they need a professional to provide advice, information and assistance. Whether it's at the design stage or further along the process, it's important that the heating system fits the space allocated to it, and even more important that it meets the heating and hot water requirements of the building.

Richard Louth is the Specification Manager at Baxi Potterton Myson Ireland. With over 30 years' in the business, he has a wealth of experience and technical knowledge. He works closely with consulting engineers and mechanical contractors to deliver a wide range of commercial heating and hot water products from Potterton Commercial, Andrews Water Heaters and Heatrae Sadia.

Richard will always go the extra mile to help consultants achieve the best possible solution. He says: "Whether it's a direct-fired water heater for a new-build hotel, the milking parlour of a dairy farm or the plantroom to deliver heating and hot water for a hospice, it is important to get the right products installed that will provide the required heating and hot water for the finished building, while ensuring continuity of supply during the project."

Sirius rigs are fabricated offsite and the turn-key package is delivered pre-assembled.

Richard Louth, Specification Manager, Baxi Potterton Myson Ireland Sirius.

Sirius rigs

In the current climate and with social distancing in place, a tailormade, prefabricated solution is proving to be a well-suited option for projects in plantrooms and with tight deadlines. The rigs are fabricated offsite and the turn-key package is delivered pre-assembled. It can be installed and commissioned easily and quickly, with a minimum number of heating engineers on site.

The rigs are available in configurations of two, three or four Potterton Commercial Sirius wall hung boilers, with a total output of up to 600kW. The boilers can be configured either in-line or back-to-back, so the rigs can be designed to suit plantrooms of all shapes and sizes, even where space is limited. All the pipework is already insulated, and the rig includes dosing pot, Smedegaard pressurisation unit, low loss header or plate heat exchanger, Grundfos pumps and customised controls and panel.

For more information on Sirius rigs, see: www.pottertoncommercial.co.uk/products/accessories-and-controls/sirius-wh-rigs

Contact: Richard Louth, Specification Manager at Baxi Potterton Myson Ireland. Tel: 086 – 257 5241; e: richard.louth@potterton-myson.ie

Schwank
Heating. Cooling. Systems.

Innovations in Heating & Climate Systems

Planning, execution, service & maintenance

supraSchwank – efficient Luminous Heater

- 99,1% seasonal efficiency*
- 82,4% radiation factor**
- 16 mg/kWh NOx
- Full modulating as standard

[* Calculated according to the European Commission Directive 2015/1188 on the supraSchwank 30/M I
[** measured according to DIN EN 419 at supraSchwank 30]

deltaSchwank – powerful Tube Heater

- 99,0% seasonal efficiency*
- 83,7% radiation factor*
- 47 mg/kWh NOx
- Full modulating as standard

[* Calculated according to European Commission Directive 2015/1188 on the deltaSchwank 320U]
[** measured according to DIN EN 416 at deltSchwank 950U]

MonsterFans – for Monster Comfort

- high comfort
- high energy savings
- long lifetime
- very quiet

Hevac Limited
Muirfield
Naas Road
Dublin 12
Ireland D12 X0A3

Paul Devereux
[Specification Manager]
Phone: [01] 4191919
Mobile: [086] 1738060
e-mail: paul.devereux@hevac.ie
web: www.hevac.ie

Hevac

CIBSE NEWS

CIBSE Benevolent Fund … help when you need it

During the current challenges arising from Covid-19, *Paul Martin, CIBSE Ireland Almoner,* advises CIBSE members and past members who are facing financial difficulties that they can approach the CIBSE Benevolent Fund for help.

Paul Martin, CIBSE Ireland Almoner.

The Benevolent Fund was set up in 1933 and since then has provided assistance to hundreds of CIBSE members, former members and their dependants who are in need, whether through sickness, bereavement or financial hardship. Present and former members of CIBSE, IHVE and IES, and their dependants, are eligible for help. It can also arrange for the CIBSE subscriptions of members to be waived during periods when they have been unwell and/or unable to work.

> We are here to help members and past members who find themselves in need, hardship or distress.

Its formal objective, as set out in the Declaration of Trust is: "The relief of persons who are in conditions of need, hardship or distress and who are members or former members of the Institution of Heating and Ventilating Engineers or of the Illuminating Engineering Society of Great Britain or of the Chartered Institution of Building Services Engineers and the immediate dependants of such persons."

The Fund's Almoners – volunteers who cover each Region of the Institution – visit those in need to assess their circumstances. The Almoners provide much valuable advice, in addition to making recommendations to the Fund's Management Committee for financial support where this is appropriate. Many clients receive a regular quarterly grant payment, while others are assisted with specific, one-off needs. In some cases, financial support may not be required, but the personal contact from the Almoner can still be of great benefit in itself.

If you are suffering hardship during the current crisis, the fund may be able to help.

Contact: CIBSE Ireland Almoner. Email:cibseirelandalmoner@gmail.com.

You can also visit https://www.cibse.org/cibse-benevolent-fund for more information. ■

G.I. INDUSTRIAL HOLDING

NOVAIR
TRATTAMENTO ARIA

Customised Air Handling from The Air Quality Specialists

Er P LOT6 - 2016

Er P LOT6 - 2018

EUROVENT CERTIFIED PERFORMANCE
AHU - 15.05.002
www.eurovent-certification.com

Core Air Conditioning Ireland Ltd
Unit 6
Centrepoint Business Park
D12 PW95
Tel: 01 409 8912

core
AIR CONDITIONING IRELAND LTD

VOCATIONAL TRAINING SUPPORT

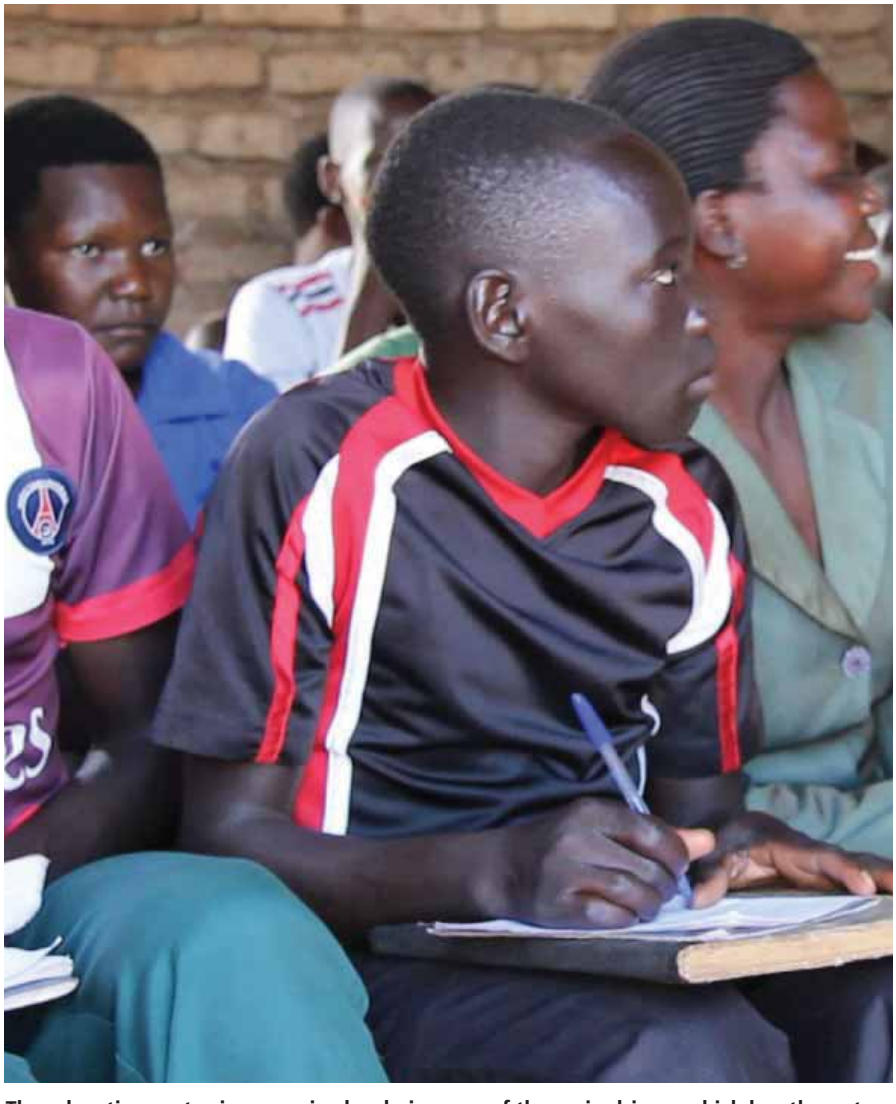
Engineering sector support sought for Gulu Vocational Training Institute, Uganda

Fields of Life (FOL) is an international development organisation that has been working in East Africa for the last 27 years. It has constructed and equipped 127 schools, put 50,000 children through education, drilled over 800 boreholes, and provided safe and clean water to over 500,000 people.

Uganda is already the focus of a particular initiative currently underway where Arup is working on the "Smart Water" project designed to develop a real-time monitoring system on hand-pumped water supply reliability. "FOL's experience and expertise in the region, and their links to the communities, have been key to our collaborative success to date on the project," says Sean Mason, Director, Ove Arup & Partners Ireland.

"Having previously been involved in the development of a secondary school in northern Uganda, Arup is very familiar with the educational needs of the region. In particular, the need for the development of skills and trades for

Above: Arup is providing technical advice to Fields of Life on their Gulu Vocational Training Institute (VTI) project.



The education sector is recognised as being one of the main drivers which has the potential to bring about socio-economic transformation in Uganda.

their youth is essential for future employment prospects and overall community prosperity. We are providing technical advice to FOL on their Gulu Vocational Training Institute (VTI) project, and are impressed with the quality of work and progress to date. We are delighted to endorse this project as one of great potential value and well worth supporting."

The young people of Gulu have suffered considerably as a consequence of the atrocities inflicted by Joseph Kony's so-called Lord's Resistance Army in the 1990s. They are still living with the legacy of 25,000 children – some as young as eight – having been abducted for forced conscription and sexual exploitation. Minors made up almost 90% of the LRA's soldiers.

The options open to today's young people are few. Of those lucky enough to get an education only 17% of university graduates gain employment when they qualify. By contrast, up to 80% of graduates from vocational training find employment within one year of completing their training.

Hence FOL's Gulu Vocational Training Institute project. With construction nearing completion and doors opening to students in February 2021, the challenge now lies in fitting out the workshops, and providing funding for scholarships for the first students.

Vocational studies are all about growing in skill and learning to use the tools of your trade. Therefore, it is vital that FOL acquires the correct machinery and tools for the VTI. From metal-working machinery and drills, through to hairdressing equipment and catering knives, all are needed to have productive courses starting in February.

With construction of the Vocational Training Institute Gulu nearing completion and doors opening to students in February 2021, the dream is becoming a reality. The challenge now is fitting out the workshops and providing funding scholarships for the first students.

The objective is to set up a college that is self-sustaining. However, FOL is also acutely aware that it is building a vocational college in an area with extreme poverty. Therefore, to equip a sustainable college takes initial investment that can build the reputation of the college, as well as helpimg those vulnerable students afford their fees.

That results in students paying something towards their fees, in order that they can take ownership, while the scholarships go to topping up their fees to a level that can keep the college performing at the highest standard. The scholarship fund is paying the VTI €100 per month, or €1,200 per year for each student.

Fields of Life is close to completing phase one of the project, having already secured and invested €1.2m, but now needs €250,000 for equipment and €180,000 in scholarship funding. It is also important to note that the administrative costs at FOL are capped with 90 cent of every €1 donated being spent on actual projects.

Some of the equipment required includes a standard lathe machine (medium), universal cutter and tool grinder, power hacksaw, surface-grinding machine, air compressor set and workbench fitted with bench vice.

Just like Arup, the readers of *Building Services Engineering* can fully identify with the specialist needs of the Gulu VTI project and may be in a position to help. To do so simply log on to https://www.fieldsoflife.org or email: alex.gason@fieldsoflife.org

The Gulu district saw much of the fighting between the Ugandan army and the Lord's Resistance Army. Over 90% of the population has returned to their villages after more than two decades of living in what were known as "Internally Displaced People Camps".

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

Versatile

Heating · Cooling · Ventilation

A schools solution that's simply smarter for everyone

In recent years, schools of all sizes across Europe and America have made significant efforts to improve indoor air quality (IAQ) to enhance not only students' health but their achievement levels too. So, it's time for Ireland to catch up with the wider international trend and to switch on to the multiple benefits of smarter ventilation in schools.

A pioneering approach

Ideal for schools of all sizes, Oxygen helps create learning environments that are conducive to higher levels of achievement while, at the same time, boosting the school building's green credentials.

Benefits of controlled ventilation

Tests conducted in the Netherlands – and carried out in the middle of the school day, when concentrations of CO_2 tend to be elevated – demonstrated that school children performed language and maths tasks better in controlled ventilation conditions than when only basic ventilation was provided.

Improved cognitive performance

Trials by the International Centre for Indoor Environment and Energy found that when temperature remains in the range 20-25°C, indoor air quality – and CO_2 concentrations in particular – have a more profound effect on cognitive performance than elevated temperatures.

Constant clever control

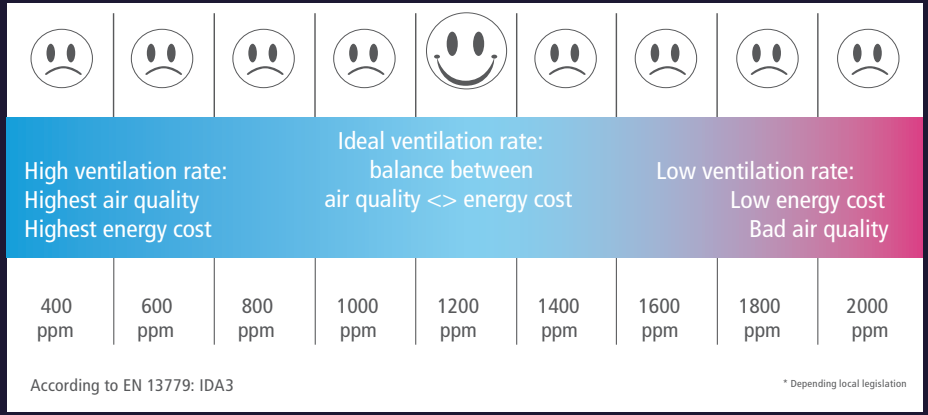
OXYGEN Dynamic uses CO_2 sensors to constantly monitor IAQ and manage ventilation needs on a room-by-room basis. A central controller directs refresh units to work in unison with exhaust units to increase or decrease the amount of fresh air delivered into individual rooms. Teachers can also use a smart switch to briefly boost airflow if they feel it is required.

Unique displacement ventilation

The controlled supply of fresh air at low level, and the extraction of exhaled stale air at high level on opposite sides of the classroom, ensures optimal IAQ for the room's occupants – and an increase in ventilation efficiency of 20% *[source: NPR-CR1752].*

Six good reasons to opt for OXYGEN

1. Improves indoor air quality to create an optimal learning environment every time;
2. Delivers clean, healthy, fresh air on demand in a highly energy efficient way;
3. Is an intelligent, integrated solution that meets all your heating and ventilation needs;
4. Is completely controllable and fully scalable to meet any changing and future needs;
5. Can help to reduce the carbon footprint of the school/university;
6. Offers significant energy and cost savings for years to come.



Trials by the International Centre for Indoor Environment and Energy found that when temperature remains in the range 20-25oC, indoor air quality – and CO2 concentrations in particular – have a more profound effect on cognitive performance than elevated temperatures.

OXYGEN

Simply smarter

OXYGEN is an intelligent and fully controllable heating and ventilation solution that optimises indoor air quality (IAQ) in an energy-efficient way for an optimal learning environment. It works by combining unique displacement ventilation with an integrated heating system and complete controllability – all of which makes it simply smarter than other options – available on three levels:

1 **Optimal ventilation**
Unique displacement ventilation ensures optimal indoor air quality

2 **Integrated heating (and night time cooling)**
In-built heating & free cooling solution ensures optimal temperature

3 **Complete controllability**
Smart system ensures optimal performance and energy efficiency

Smarter Classroom Ventilation

Four key components work in unison to provide an enhanced learning environment that is conducive to higher levels of achievement.

OXYGEN Refresh Units

Silently suck in outside air, filter it and supply it into the classroom.

CO_2 Sensors

Constantly monitor IAQ by measuring ambient CO2 levels in each room.

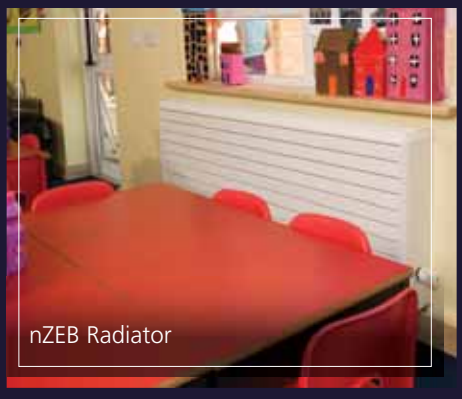
Controller

Continually regulates the balanced intake and exhaust of air in each individual classroom.

Smart Switch

Gives teachers the ability to briefly boost the flow of fresh air if they feel it is required.

Learn more by registering for Versatile's CIBSE & RIBA accredited CPD Webinar "Ventilation in Schools" here www.versatile.ie/cpd-seminars



Oxygen works seamlessly with a range of energy-efficient radiators

Beechmount Home Park,
Navan, Co. Meath

+353 (0)46 902 9444
sales@versatile.ie

www.versatile.ie

Versatile

Heating · Cooling · Ventilation

RADIATORS

Correct radiator sizing critical to system performance, regulation compliance and grant approval

Part L of the Building Regulations is concerned with the conservation of fuel and energy in dwellings. Part L for dwellings is supported by *Technical Guidance Document (TGD) L Dwellings 2019* which gives guidance on how to satisfy the energy performance provisions of the Building Regulations for new and existing dwellings.

The TGD quotes the regulatory requirements where relevant. These provisions are highlighted the text, but in cases of any doubt, however, it may be necessary to refer directly to the Building Regulations as amended.

The TGD was published in 2019 in support of the amendments to the Building Regulations, Statutory Instrument (S.I. No: 292 of 2019) and in support of the application of the European Union (Energy Performance of Buildings) Regulations 2019 (S.I. No: 183 of 2019). Both S.I. came into force on 1st November 2019.

This guide covers conventional means of providing primary and secondary space heating and domestic hot water for dwellings in Ireland. It is also the supporting document referred to in Building Regulations TGD L & Energy Performance of Buildings Regulations 2019 Dwellings Par 1.4.2.4 as a source of guidance on the means of complying with the requirements of the Building Regulations for space heating systems and hot water systems. The guide was prepared in consultation with relevant industry bodies.

Radiators

Correct radiator sizing is critical to system performance, regulation compliance and grant approval, and is an area that continues to cause problems and a great deal of discussion. To help consultants, system designers and contractors address the more common issues that arise, *Building Services Engineering* has reproduced here, in full, *Appendix B – Guide to the radiator sizing for various heat generators*, from the official TGD.

The *Appendix B* gives guidance on how to size a radiator for a room and details how to size the radiators for heat generators with varying flow and return temperatures.

Radiator selection

Radiator outputs are typically based on a water-to-air temperature difference ΔT 50°C in manufacturer's product catalogues.

The higher the ΔT value, the higher the radiator output will be. Traditional gas or oil non-condensing boilers operate with higher flow and return temperatures 82/71°C, while condensing boilers operate at lower flow and return temperatures 65/55°C, to increase their efficiency. Heat pumps normal operating temperatures are 45/40°C, to increase their efficiency – see following examples on how to size radiators for various heat generators.

$$\Delta T = \frac{(\text{flow temperature} + \text{return temperature})}{2} - \text{Room temperature}$$

– Traditional gas or oil non-condensing boilers, flow and return temperatures 82/71°C and room temperature 20°C

$$\Delta T = \frac{(82 + 71)}{2} - 20$$

$$\Delta T = 56.5°C$$

– Condensing boilers, flow and return temperatures 65/55°C and room temperature 20°C

$$\Delta T = \frac{(65 + 55)}{2} - 20$$

$$\Delta T = 40°C$$

– Heat pump technology, flow and return temperatures 45/40°C and room temperature 20°C

$$\Delta T = \frac{(45 + 40)}{2} - 20$$

$$\Delta T = 22.5°C$$

The reduced temperature difference reduces the output of the radiator. Many radiator manufacturers supply information for radiator output based on a ΔT value of 50°C. Table B1 is an example of typical information detailed in a radiator manufacturer's radiator catalogue.

Where radiators are to be installed for different ΔT values, the stated radiator outputs must be multiplied by a conversion factor to account for the different ΔT value. Manufacturers should be asked to provide conversion factors for different ΔT values.

Radiator conversion factors

ΔT °C	Radiator Output
20	0.304
30	0.515
40	0.748
45	0.872
50	1.000
55	1.132
60	1.268

Table B2

Radiator sizes and outputs

Radiator Height (mm)	Radiator Length (mm)	Heat Output at ΔT 50°C	
		Watts	BTU
450	400	424	1446
	500	535	1827
	600	647	2208
	700	758	2585
	800	869	2966
	900	980	3344
	1000	1092	3725
	1100	1203	4106
	1200	1314	4483
	1400	1536	5242
	1600	1760	6004

Table B1

GRANT

Call **057 9126974**
www.grant.eu

#ThinkHeating**ThinkGrant**

Home Heating Design Service

Save time and maximise efficiencies on new build & retrofit projects

Our Free Home Heating Design Service can provide greater long-term savings. Take advantage of our team's specialist knowledge and allow us to correctly size the heating system and specify best suited heating products for the property, taking it to a new class of efficiency.

Service includes room by room heat loss calculations based on SR:50 guidelines, correct sizing and combination of Grant products including the **A+++ Aerona³ R32** air source heat pump, A rated pre-plumbed hot water cylinders, **Afinia** aluminium radiators and **Uflex** underfloor heating system. We can ensure NZEB standards (Part L) are met along with requirements for EPC, CPC and BER certification.

Start the journey to zero carbon today in 3 easy steps...

Send house plans, contact number & preference of heat emitters
heatpump@grantengineering.ie

A member of our team will be in touch to discuss your requirements

You will receive full property specifications with recommended products all available from Grant

Our heating products are designed to work together as part of the Grant Multiple Package Solutions offering

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

Changes in radiator sizes with varying temperature differences				
System type	ΔT 0°C of heating systems	Radiator output at ΔT 50°C (W)	Radiator output adjusted for system ΔT (W)	Radiator size (L x H – mm x mm)
Traditional Gas or oil non-condensing boilers	56.5	424	502	400 x 450
Condensing boilers	40	758	566	700 x 450
Heat pump	22.5	1536	525	1400 x 450

Table B3

Table B2 is an example of conversion factors to be applied to outputs quoted at ΔT 50°C. Radiator manufacturers supply specific conversion factors for their specific products and these should be requested by the designer.

The conversion factor allows the calculation of the radiator output where the operating temperatures result in a ΔT value different to that of the stated ΔT 50°C. As the ΔT value reduces, larger radiator dimensions will be required to achieve the same heat output. Check with radiator manufacturer for specific conversion factors.

If a room had a calculated heat loss of 500W, the following examples detail how to select a suitably sized radiator for the space.

As detailed above:

- Traditional gas or oil non-condensing boilers, 82/71°C and room temperature 20°C has a 56.5°C ΔT.

Using Table B2 you need to calculate the factor for 56.5°C ΔT and, as the table is only in increments of 5°C ΔT, take a factor of 60 ΔT°C and the multiply output of 1.268 from Table B2.

1.268 ÷ 60 = 0.021

0.021 *x* 56.5 = 1.186

Therefore, to achieve the target of 500 Watts output for the room, we need to select a radiator from Table 1 with an output of at least:

500 ÷ 1.186 = 421 Watts

Selecting a radiator size of 424 Watts (400mm L x 450mm H) from Table B1 and multiply the calculated multiply output of 1.186

424 *x* 1.186 = 502 Watts

The radiator selected will give an output of 502 Watts for a room with a heat loss of 500 Watts.

- Condensing boilers flow and return temperatures 65/55°C and room temperature 20°C has a 40°C ΔT

Using Table B2 you need to use the factor 40°C ΔT of 0.748

Selecting a radiator size of 758 Watts (700mm L x 450mm H) from Table B1 and multiply the calculated multiply output of 0.748

758 *x* 0.748 = 566 Watts

The radiator selected will give an output of 566 Watts for a room with a heat loss of 500 Watts.

- Heat pump technology, 45/40°C and room temperature 20°C has a 22.5°C ΔT.

Using Table B2 you need to calculate the factor for 22.5°C ΔT and, as the table is only in increments of 5°C ΔT, take a factor of 20°C ΔT and the multiply output of 0.304 from Table B2.

0.304 ÷ 20 = 0.015

0.015 *x* 22.5 = 0.342

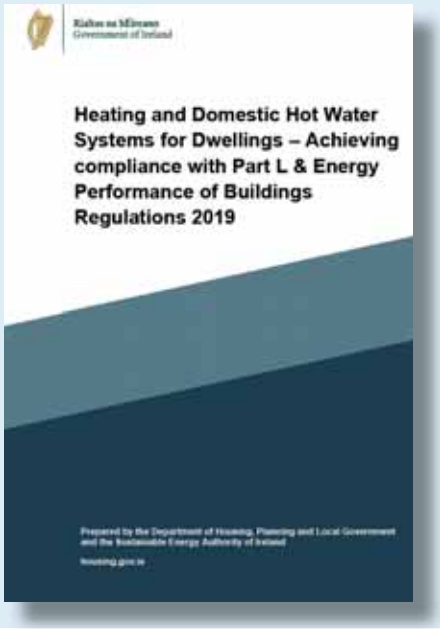
Selecting a radiator size of 1536 Watts (1400mm L x 450mm H) from Table B1 and multiply the calculated multiply output of 0.342

1536 *x* 0.342 = 525 Watts

The radiator selected will give an output of 525 Watts for a room with a heat loss of 500 Watts.

Table B3 illustrates the changes in ΔT and how these effect the radiator sizes for varying flow and return temperatures.

The heat is measured in Watts (W) or British Thermal Units (BTUs) [1W = 3.412 BTU]. ■



• *Heating and Domestic Hot Water Systems for Dwellings – Achieving compliance with Part L & Energy Performance of Buildings Regulations 2019* – this document is essential reading for all those involved in radiator sizing and heating/dhw system design.

Sira – elegance, versatility and power

Sira Industrie is a leading manufacturer of domestic heating radiators and the worldwide patent holder of the first revolutionary aluminium radiator, developed and registered in 1961. It has a portfolio of key ranges, developed to suit specific applications, with all radiators manufactured using the most advanced techniques to provide maximum performances with less energy consumption.

Sira Alice Princess radiator from Unitherm Heating Systems.

The full range is now available in Ireland from Unitherm Heating Systems with the Alice Princess collection very much to the fore. This new die-cast aluminium radiator features an elegant design with two front fins. The top has a rounded and edge-free shape that makes for a refined aesthetic and guarantees high safety. Thanks to the front fins directing heat towards the centre of the room, this radiator delivers perfect environmental comfort and high performances.

Dimensions

- Diameter of connections 1";
- Element width 80mm;
- Assembled in compositions from four to 15 elements;
- Standard colour RAL 9010 white Sira Industrie;
- The maximum operating pressure is 600 kPa (6 bar);
- Watt thermal efficiency tested and obtained at MRT of the Politecnico di Milano, as per EN 442/1/2 norms.

Apart from the Alice Princess collection, the Sira radiator portfolio also includes the following:

Steel towel rails
Termoarredo is a towel rail range that combines excellent thermal performances and smart design. Made of high-quality carbon steel, these towel rails are real furniture elements … elegant, refined and easy to integrate into any environment. They are designed to ensure home safety thanks to soft and rounded contours.

Extruded aluminium radiators
Aluminium is a line of extruded aluminium radiators from Sira that offer great versatility, excellent performance and low consumption. Because of Sira's special technology, these radiators are the only ones to reach a 2000mm height and to adapt to any market's demand.

Bimetal and hybrid radiators
Bimetal is a range of modular radiators by Sira that represents unique capabilities. Patented by Sira, Bimetal technology combines the advantages of a steel core with those of an aluminum body. Bimetal radiators feature curves and original shapes that distinguish them from other brands. The main points of strength are:

SIra Alice Queen.

- Innovative and unique flawless finish;
- Very fast setup, reduced water content;
- Unmatched structural strength and durability;
- Special steel alloy frame;
- Absence of sharp edges.

The Bimetal range has recently been expanded with a new innovative patented product, RS Twin hybrid radiator, that can operate with separate hot water supply or with stored electricity energy.

Electric radiators
Electron is the new line of Sira electrical radiators featuring innovative technology and high performance. It uses armored electrical resistances, integrally fused one-by-one, in sectioned aluminum fins. This permits optimal thermal conductivity and a more precise regulation of heat.

Contact: Unitherm Heating Systems. Dublin: 01 – 610 9153;
Cork: 021 – 441 4010;
Galway: 091 – 380 038.
email: info@unithermhs.ie;
www.unithermhs.ie ■

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

Increase property efficiencies with Grant's heat emitter range

Grant understands the importance of selecting the correct main heat source to suit each individual property. Following this, specifying the most efficient heat emitters for every room is essential to distribute heat effectively.

When working on a new-build or retrofit project, careful consideration should be given to understanding the requirements of the property, in terms of the heat loss of each room and ensuring the heat output of the radiators is at the correct ΔT (Delta T).

Designed with both the installer and property owner in mind, Grant's range of heat emitters includes the Grant Uflex underfloor heating system, Grant Afinia aluminium radiators and Grant Solo fan convector radiators. Underfloor heating and aluminium radiators are great choices to heat individual rooms and these modern heat emitters can efficiently distribute heat, while offering versatility to support the overall design and architecture of the space.

Grant's Uflex underfloor heating system provides a balance of warmth throughout a property, in addition to increased hygiene because of reduced air circulation. It also means more space to design and decorate a room without blocking radiators with furniture. The system is designed to be embedded within the floor construction and is ideal for new-builds as it offers easy installation, optimal control with individual zone heating and comfort.

For properties requiring high-efficiency radiator systems, Grant offers the Afinia aluminium radiator range.

Grant Uflex is designed to be embedded within the floor construction.

Left: The Grant Afinia Aluminium 5-panel vertical radiator.

With both vertical and horizontal combinations available, and the ability to expand these radiators from 6 to 20 panels, Grant Afinia radiators are also easy to install.

Grant's Uflex underfloor heating system and Afinia aluminium radiator ranges are complementary to each other, and compatible with both high and low temperature systems. This means both will work effectively with Grant's Aerona^3 R32 air to water air source heat pump range. Installing both of these heating technologies helps save energy and money as they work at low temperatures, using less energy.

When selecting the heat emitters it is essential to ensure correct sizing. To help save time on a project, Grant offers a free-of-charge heating design service, where the Grant technical specialists professionally design the most efficient heating system for the property. Room by room heat loss calculations are established in line with SR:50 requirements and this helps prove compliance with Part L of the Building Regulations, while also calculating the heat pump output, the hot water demands and underfloor heating and/or radiators for the property.

To avail of this service, email property plans, along with a contact phone number and your preferred heat emitters to heatpump@grantengineering.ie

In addition to helping architects, engineers, builders, BERs, technical advisors and installers save time with its heating design service, Grant also provides peace of mind by helping to ensure NZEB compliance on all heating requirements for new-build properties. The Grant team will work with a BER assessor to ensure future compliance and Building Energy Rating (BER) certification for properties that comply with Part L of the Building Regulations.

Visit www.grant.eu for more information on Grant's range of innovative heating solutions. Follow Grant on Facebook and Twitter @GrantIRL or Instagram @Grant_IRL.

Think Heating. Think Grant.

TIDL
insulation solutions

Thermal Insulation Distributors Ltd

Thermal Insulation

Passive Fire Protection

Noise Control

Customised Insulation Products

Thermal Covers

Contact us, we are ready to help!

+353 1 8829990 sales@tidl.ie fire@tidl.ie

www.tidl.ie

C&F QUADRANT

CREATING A QUALITY ENVIRONMENT

Commercial nZEB compliance assured with Unical multiple ranges

As sole distributor for the extensive Unical range of commercial and industrial products, C&F Quadrant continues to deliver growth and increased market penetration for the brand across all industry sectors throughout Ireland.

Unical is renowned for its pioneering development work in boiler design and technology. Its broad-ranging portfolio includes medium and high-power gas and oil boilers, heating units, modular heating units, and cascade systems for indoor and outdoor applications. All these products are distinguished by low NOx emissions and power ratings of up to 7000Kw. Included are light commercial aluminium boilers; aluminium condensing commercial boilers; stainless steel light commercial boilers; commercial condensing NOx boilers; and standard commercial boilers.

Unical and C&F Quadrant make for the perfect partnership. A member of the Linders of Smithfield Group of companies, C&F Quadrant is a major supplier of internationally-renowned heating and plumbing brands catering for the commercial and domestic heating markets. With offices in Dublin and Belfast, and a network of regional representatives and merchant trading partners, comprehensive all-Ireland coverage is assured.

Unical headquarters in Mantovo, Italy

Complementing the extensive product portfolio is a team of highly-qualified, engineering-led, personnel who provide advice and technical support, right through from project inception to commissioning and after-sales support.

This expertise is now critical given the drive for all future commercial projects to be zero energy rated buildings. The availability of BIM files is a further strength in the drive for nZEB compliance, while the fact that the products are listed on the SEAI Triple E Register means that they also qualify for Accelerated Capital Allowances.

Unical®

www.cfquadrant.ie www.unicalboiler.com

Distinguished by low NOx emissions

Ellprex Steel Boilers

Ellprex is a range of pressurised steel boilers for gas, oil or heavy-oil pressure jet burners with floating furnace, and capacities from 340kW up to 7000kW. Key features and benefits are:

- Reverse flame combustion chamber;
- Elliptic boiler body up to the model 970kW;
- Highly condensate resistant;
- Silent operation;
- High mechanical resistance;
- Adjustable door with double opening;
- Easy installation.

Modulex Aluminium Boilers

Available in a range of models suitable for indoor and outdoor installation, Modulex is a cast aluminium condensing boiler with each section a self-contained heat-generating module that has a down-firing pre-mix gas burner with its own control and safety (limit) thermostats. The in-built BCM (Boiler Cascade Manager) modulates the boiler on a cascade down to a minimum output of 12kW for models 100 to 350, and 22kW for models 440 to 1200.

Pre-mix burners use an air intake fan coupled to a venturi to control the volume of gas being entrained. This ensures an optimum mixture of gas and air at any output rating, together with thorough mixing before ignition. Thermal efficiencies of up to 109% net are achieved, with Nox Class 6 accreditation.

XC-K Condensing Boiler

Unical's XC-K is a large-water-content condensing boiler range with the outer pressure vessel in high-resistance carbon steel. The tube bundle is made of special patented progressive pipes in stainless steel, with special multi-fin inserts. The combustion chamber, completely water cooled and placed above the tube bundles and the assembly, forms a structure suitable to favour the heat exchange. Benefits include:

- Suitable for oil and gas;
- Capacities from 124kW to 2160kW;
- Inner waterway driven and braked;
- Special "progressive" patented smoke pipes;
- Tube bundle slightly tilted toward the smoke chamber;
- Carbon steel door with recyclable insulation;
- Panel board of electronic type with E8 controller;
- Pre-arrangement for cascade of more boilers;
- Double boiler body insulation.

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

Coming soon … shadow black FDT cassette from MHI

Mitsubishi Heavy Industries FDT range of ceiling cassettes offers reduced noise while keeping capacity and comfort at an optimum. It delivers high energy savings with comfort air conditioning, providing the user with multiple solutions of comfort and energy savings.

The FDT can achieve high energy efficiency by the use of Mitsubishi Heavy Industries' technology, such as a high-performance compressor and DC PAM inverter technology. Due to the unique design of the DC fan motors, MHI ceiling cassettes are some of the slimmest on the market, allowing for siting flexibility and ease of installation. They offer a versatile solution for a wide range of commercial spaces such as fitness centres, retail shops, small to medium offices, cafes, restaurants, etc. The units are designed with a built-in drain pump as standard and have "Blue Fin" coating on the condenser unit for improved corrosion resistance.

FDT ceiling cassettes are available in single-phase or three-phase options with a range of capacities from 6kW to 14kW. With new draught control technology and optional new motion sensor feature, the FDT series provides comfortable air flow that doesn't create warm or cold draughts. It also detects the amount of human activity in the room, automatically switching to energy-saving mode at times of low activity. The 800mm built-in drain pump and up to 100m pipe run makes this range suitable for all types of residential and commercial spaces.

Left: Typical FDT installation featuring the white unit with the black unit, coming shortly, inset.

Key features

- Automatic energy saving control;
- Maximum comfort with minimal draft;
- Quiet operation;
- Sustainable solution.

The MHI FDT range of ceiling cassettes is available in Ireland through DWG's Dublin and Cork branches and has already proved very popular with installers. "We've been very pleased with the response to the FDT range so far," says DWG's Mark Kiely, "though it is not unexpected. This is a very advanced range of four-way compact ceiling cassettes that allows the use of ceiling-mounted cassette systems within small areas.

"The units fit neatly within a 600mm x 600mm ceiling grid, while four directions of airflow can be controlled by individual flap control. Six different louvre positions are available while the drain pump is located within the unit. These indoor units can also be used on a multi-split system as an option.

"Apart from the technical features and benefits, the design and styling of the units means they complement any interior with the imminent introduction of the "shadow black" version eagerly awaited by installers and specifiers alike."

Standard features include auto restart, 24hr on/off programmable timer, sleep timer, 7-day weekly timer, individual louvre control, lift pump for condensate, and a knock-out duct of 100mm x 100mm for fresh air make up.

Contact: DWG Dublin.
Tel: 01 – 462 7311; email: dublinbranch@dwgeire.ie;
Cork Branch. Tel: 021 – 431 2111; email: corkbranch@dwgeire.ie ■

Reducing the risk of Corona infection in industrial buildings with infrared heating

Employers and employees are understandably concerned with one fear at present – what is the risk of infection at work? Could the illness of an employee result in a forced closure of the company? Even if safety distances, regular surface disinfection and part-time working models (including home office) are suitable measures to reduce the risk of infection among employees, other hygiene guidelines have been in force in offices and production buildings since the pandemic began, and even building equipment such as heating systems must now be critically examined.

SARS-CoV-2 viruses are carried by air movement. It is known that Covid-19 infection occurs mainly via droplet infection and aerosols, i.e., micro-droplets produced while talking, coughing and sneezing. When in contact with other people, we try to avoid this as much as possible by using masks. What works well outdoors can still become a risk in closed rooms.

A study at the renowned Hermann Rietschel Institute for Heating and Ventilation Technology at the Technical University of Berlin on the transmission time of SARS-CoV-2 viruses in the air has produced interesting results on the length of time and distance travelled by the viruses. After 20 minutes, more than 50% of medium size particles (3 to 10 µm) were still found in the air. "Larger particles sink to the ground faster. Smaller particles follow the air flow and can remain in the air for quite a long time," says Professor Martin Kriegel, Head of the Hermann Rietschel Institute, Department of Building Energy Systems.

"Another study shows that even larger droplets (>60 µm) can, under certain circumstances, spread far into a room. This is the case, for example, if the particles are emitted by a person and it rises, spreads horizontally and only then starts to settle. Possible horizontal air movements further intensify the spreading effect." Kriegel says (source: TU Berlin).

Does the healthier heater heat without air?

Heating systems that work without air movement, such as radiant heating systems, can significantly reduce the risk of infection, according to the studies.

Schwank GmbH, the market leader for gas infrared radiant heaters, sees a trend in this. "Many of our prospective customers evaluate a heating system now with a strong focus on minimising spreading the risk of the corona virus. Our luminous and tube heater systems, which do not move, are experiencing a considerable growth of interest," said a spokesperson.

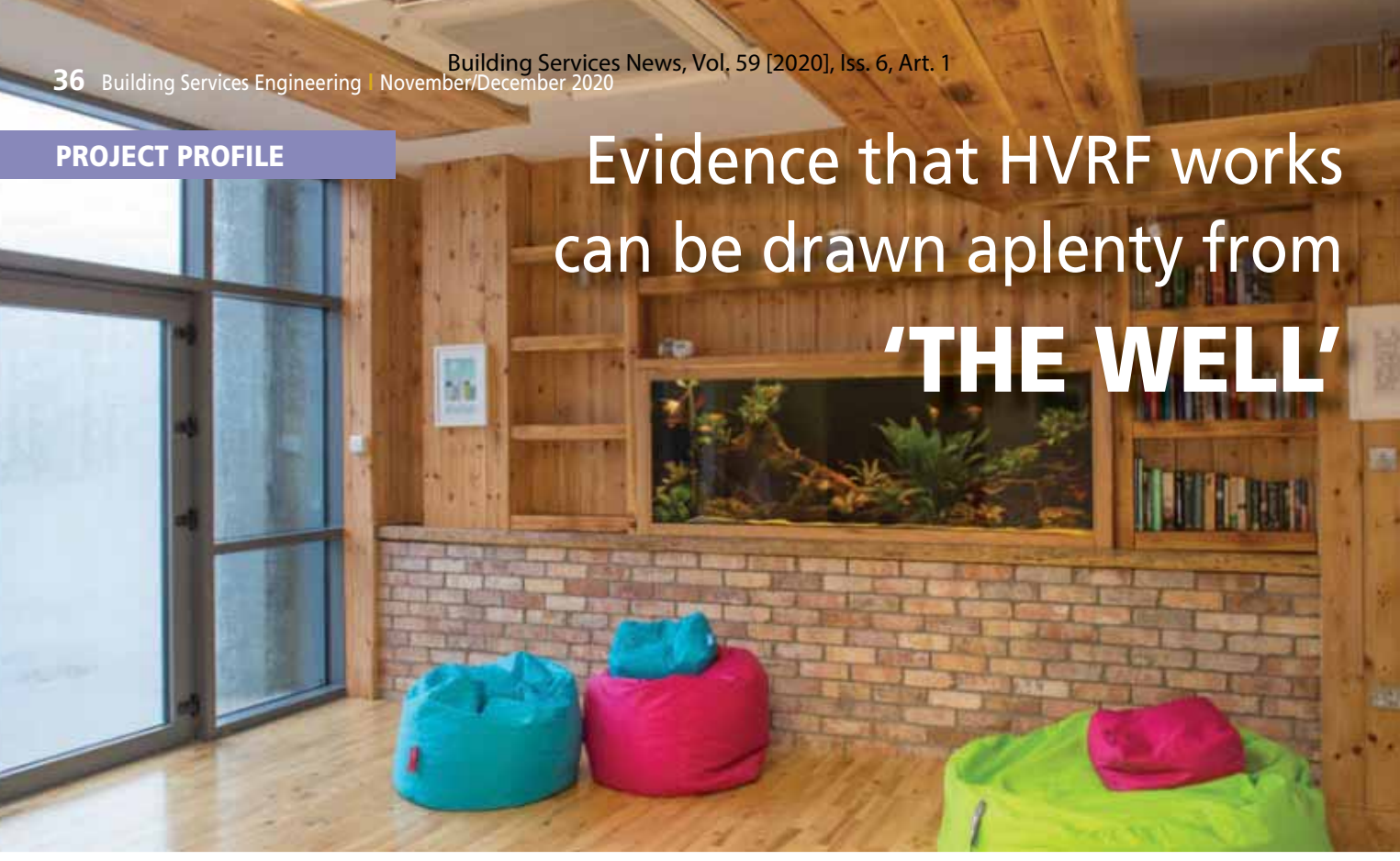
Heaters such as luminous or tube heaters transfer heat by means of electromagnetic waves, so-called infrared rays. Where the infrared rays strike, they are converted into heat, the same principle as of the sun. Therefore, infrared heaters do not require a carrier medium to transport their energy. The heat is transferred from the heating system to the employee's area without any air movement such as with conventional heating systems. That means it is also very economical. Radiant heaters thus avoid undesired air currents, dust movement and heat cushions under the building's ceiling.

Contact: Paul Devereux,
Specification Manager, Hevac.
Tel: 01 - 419 1919;
Mobile: 086 - 173 8060;
email: paul.devereux@hevac.ie
web: www.hevac.ie ■

Heating systems that work without air movement, such as radiant heating systems, can significantly reduce the risk of infection.

PROJECT PROFILE

Evidence that HVRF works can be drawn aplenty from 'THE WELL'



Sirus Group has offices in Cork and Dublin and has been providing services to the HVAC, electrical and controls industry since 1988. It has grown considerably since those early days and now employs over 120 staff specialising in the delivery of critical environments to the pharma, biotech and data centre sectors. It also provides turnkey, maintenance and FM services across a wide range of equipment and a diverse customer base including industry, education, retail, hospitality, healthcare, life sciences, airports, etc.

When considering the deep retrofit and renovation of an old industrial unit in Citywest approximately four years ago, Sirus set out to establish The Well, a comfortable and healthy environment for workers that would also enhance their sense of well-being.

Constructed in the late 1990s, the challenge was to bring The Well to life as a state-of-the art, Class 1, smart, comfortable working environment. Expert sources, such as *CIBSE Guide A: Environmental Design*, helped shape a holistic approach to the retrofit ensuring a sustainable and low energy building would be possible, while not compromising on occupant comfort and wellbeing.

The design team specified the most energy efficient and low environmental impact building technologies. A vaulted open ceiling with very innovative triple-glazed bespoke window units to direct natural light into every section of the first floor was designed to fit into an airtight insulated ceiling beneath the warehouse roof panels. The poor building fabric insulation of the 1990s made way to high-density, airtight insulation and pumped insulation up to 400mm throughout the building cavity.

The primary objective was to create a pleasant environment for staff at The Well through a combination of a state-of-the-art building management system providing clean fresh air with internal insulation ensuring optimal thermal comfort for employees. Noise levels are minimimised through acoustic design and natural materials were used to reduce volatile organic compounds in the air.

Having carefully considered what indoor air quality/comfort equipment to use, the Sirus design team concluded that the Mitsubishi Electric HVRF (hybrid variable refrigerant Flow) system was the ideal solution. Four years later this decision to use a then relatively new technology as the main source of

One of the office interiors at The Well.

sustainable energy has been fully vindicated.

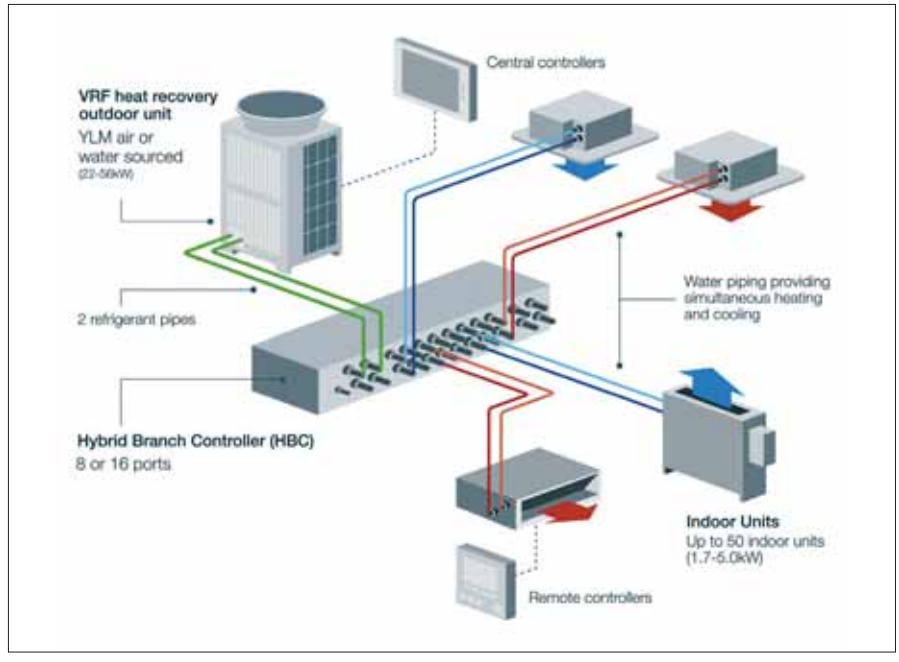
The Mitsubishi Electric HVRF system uses heat pump technology with a full heat recovery system. Critically, the refrigerant gas is circulated outside the building into a heat exchanger which transfers heat/cool between the outdoor unit to the water used in the indoor units. This means there is no refrigerant in occupied spaces. It also minimises leaks and is therefore beneficial to the environment. Furthermore, it reduces the F Gas charge by 75%, future proofing the building system as regulations drive costs higher.

As a complementary sustainable element Sirus also installed a Mitsubishi Electric Lossnay fresh air heat recovery unit. This is capable of supplying and extracting up to 2,000 m^3/h of fresh air, and has a temperature exchange efficiency up to 84%. This significantly reduces the amount of heating needed for the fresh air supply in each zone.

Four years on, The Well demonstrates how innovative thinking can re-purpose a building by creating an energy efficient, healthy and comfortable environment for employees. It is now an established exemplar building that highlights how even older premises can be re-purposed to deliver a healthy environment for staff through a combination of innovative equipment and a state-of-the-art building management system.

Evidence-based data collated over four years indicates that, due to the sustainable technologies, the building's energy usage is now about 50% of what it originally would have been. What is even more encouraging is that the predicted energy savings were conservative. In reality, the gains are far greater than expected.

There have been other unexpected benefits, flexibility in the use of space being one. For instance, moving office or sub-dividing a larger space into new configurations is problem-free. There is no need to decommission the entire system, or to drain it down. It is also a simple process to upgrade the filters in the Lossnay system, a feature that is now more critical than ever given the renewed focus on indoor air quality because of the Covid-19 pandemic.



Schematic showing hybrid branch controller at the heart of the Mitsubishi Electric HVRF.

Since the installation of the Mitsubishi Electric HVRF system on The Well project further advancements have taken place with the technology. Stronger legislation is impacting on the use of energy in the built environment (as evidenced the recent publication of the EU *Renovation Wave Initiative*), while there is a determination to look for new refrigerants to mitigate any harm to the environment.

A new approach to delivering energy efficient heating and cooling to buildings is needed and Mitsubishi Electric's R32 Hybrid VRF system is a case in point. It uses R32 as refrigerant and operates without using refrigerant in occupied spaces, removing the need for leak detection equipment and allowing more properties to take advantage of manageable phased installation through the system's modular two-pipe design.

This unique air conditioning system delivers levels of comfort normally associated with chiller technology, while also providing the flexibility and efficiencies of refrigerant based air conditioning. Hybrid VRF therefore offers an additional solution to traditional VRF or chiller systems. Put simply, Hybrid VRF is a 2-pipe heat recovery VRF with water between the hybrid branch controller (HBC) and indoor units. The system can be designed and installed as as VRF while enjoying the features of a chiller system. It delivers a complete solution for office buildings, hotels, medical centres, schools, high rise buildings, shopping centres and other commercial premises.

Hybrid VRF is quick, easy and flexible to design and install using the same control and network as VRF systems. Furthermore, the decentralised system means phased installation is possible with the same high levels of seasonal efficiency expected with VRF. With water at the indoor units, Hybrid VRF provides comfortable and stable air temperature control with no refrigerant in occupied spaces, meaning simple regularity compliance and removing the need for leak detection.

Getting back to The Well project, and bearing in mind that it was conceived at a time when knock-and-rebuild was considered the easy option, it is an exemplary display of sustainability. This is evident in the re-use and re-imagination of the internal building space, and many of the core materials used within it. The finished product is an emphatic representation of what can be achieved when the occupant and their comfort and wellbeing are placed the at the core of building design. The entire open design has the added benefit of being a living educational facility, not just for building engineering students, but for all involved in the sector. ■

Grundfos saves Christmas with 'boost' for world's largest toy operation

With only weeks to go before Christmas, operations are back running at full capacity at Santa's workshop, thanks to Grundfos. Several major issues recently led to a temporary halt of operations at the North Pole facility, and at its most critical time of the year. Most notably, an old pump used to heat the elves' workshop had failed, causing unsafe working conditions for the elves.

But it wasn't just the elves that were facing temperature issues. Global warming has been on Santa's radar for a long time, and now it has begun to affect his reindeer. Rising average temperatures have made the reindeer uncomfortably warm, requiring Santa to build a facility for them to stay in sub- zero temperatures throughout the entire year.

In order to help combat his rising carbon footprint, Santa took these heating and cooling issues as an opportunity to optimise his HVAC system using the latest technology. This is where he turned to Grundfos as its MAGNA3 circulator pump was the perfect solution.

MAGNA3 pumps are extremely flexible and reliable, have low noise levels, a long lifespan and no maintenance requirements. Every detail of the MAGNA3 is designed to boost efficiency, so not only does it solve Santa's issues, it also lowers both his operating costs and carbon footprint.

"It has been quite an exciting time at Grundfos, working with such a global figure. We're delighted that we can help Santa and his team get back to doing what they love," said Liam Mc Dermott, General Manager, Grundfos Ireland.

So now Santa's workers are happy; the elves are back at work making toys; and the reindeer are comfortable again, resting up for their big night ahead.

From everyone at Grundfos we wish you a very happy Christmas and new year.

MAGNA3 sporting a Santa hat presented by the great man himself.

Renovation Wave Strategy finally published

The second week in October saw the European Commission finally publish its Renovation Wave Strategy to improve the energy performance of buildings (see *Building Services Engineering,* July/August 2020). The Commission aims to at least double renovation rates in the next 10 years and to make sure renovations lead to higher energy and resource efficiency. By 2030, 35 million buildings could be renovated and up to 160,000 additional green jobs created in the construction sector.

Buildings are responsible for about 40% of the EU's energy consumption, and 36% of greenhouse gas emissions. However, only 1% of buildings undergo energy efficient renovation every year. While a negative in some respects, this also means huge business opportunities for all involved in the building services engineering sector.

The strategy is to prioritise action in three areas – decarbonisation of heating and cooling; tackling energy poverty and worst-performing buildings; and renovation of public buildings such as schools, hospitals and administrative buildings. The Commission proposes to break down existing barriers throughout the renovation chain – from the conception of a project to its funding and completion – with a set of policy measures, funding tools and technical assistance instruments. This includes the following:

> By 2030, 35 million buildings could be renovated and up to 160,000 additional green jobs created in the construction sector.

- Stronger regulations, standards and information on the energy performance of buildings;
- Ensuring accessible and well-targeted funding;
- Simplified rules for combining different funding streams, and multiple incentives for private financing;
- Increasing capacity to prepare and implement renovation projects;
- Expanding the market for sustainable construction products and services, including the integration of new materials and nature-based solutions;
- Developing neighbourhood-based approaches for local communities to integrate renewable and digital solutions, and to create zero-energy districts.

The review of the *Renewable Energy Directive* in June 2021 will consider strengthening the renewable heating and cooling target and introducing a minimum renewable energy level in buildings. The Commission will also examine how the EU budget resources, alongside the EU Emissions Trading System (EU ETS) revenues, could be used to fund national energy efficiency and savings schemes targeting low-income populations. The Ecodesign Framework will be further developed to provide efficient products for use in buildings and to promote their use.

For more detailed information see below links:

- Renovation Wave Strategy
- Annex and Staff Working
- Document on the Renovation Wave Strategy
- Memo (Q&A) on the Renovation Wave Strategy
- Factsheet on the Renovation Wave Strategy
- Factsheet on the New European Bauhaus
- Energy poverty recommendation Annex and Staff Working Document on the Energy Poverty Recommendation ■

Airpur

– stand-alone air purification equipment for commercial/industrial applications

AIRPUR

S&P's Airpur ventilation and air purifier units are ideal for premises that do not have adequate ventilation systems, or as a ventilation accessory in the control of specific contaminants, including viruses and bacteria.

The stand-alone air purification units work by filtering contaminants in the indoor air. The dirty air is drawn in by the equipment and, after passing through a multi-stage filter arrangement, the clean air is returned to the room.

BREATHE HEALTHY INSIDE
Indoor Air Quality

There are four different ranges in the portfolio – PAP vertical and horizontal units; UP vertical and horizontal units; Airpur 360°; Airpur N.

The search for excellence in indoor air quality has been Soler&Palau's mission since 1951.

Global strength... applied locally

www.solerpalau.ie

PAP 850 & PAP 650

- ✔ Stand-alone air purification equipment for commercial applications.

Airpur 360º

- ✔ Column-type portable residential air purifier. For rooms of up to 50 m² with flow rate of 450m³/h.

Airpur-N

- ✔ Extremely silent air purifier for rooms up to 25m². Guarantees to renew the air in a room at least three times per hour.

UP-V & UP-H

- ✔ Air purification units for commercial and industrial applications that can be wall or ceiling mounted.

AIRPUR S&P

E: sales.ie@solerpalau.com Tel: 01 – 412 4020

PROJECT PROFILE

Varming Design Excellence Award for Three Park Place

Varming Consulting Engineers has won the prestigious 2020 ACEI Design Excellence Award in the Mechanical and Electrical Category for the Three Park Place project, which is the latest completed building of the Park Place Office Complex, developed by Clancourt Management on Hatch Street in Dublin 2. The total area of Three Park Place, which is customised for multiple tenant occupancy, is 18,000 sq m.

The Adjudicators' Citation for the winning project read: "This modern nine-storey office building is an excellent example of BIM-aided delivery of a sustainable environment to BER A3 and LEED Platinum ratings. Night cooling storage and the use of CHP plant, along with solar panels integrated with a "green roof", enhanced ventilation and a thermally-efficient façade all contribute to this achievement."

The Varming project vision was to achieve the highest standard of m&e performance, based on agreed budget costs using state-of-the-art engineering design protocols to reduce the carbon footprint and to minimise the operating costs. The application of this approach subscribed strongly to meeting energy efficiency targets and to achieving

The importance of the location has been recognised by Dublin City Council's decision to designate the area surrounding Park Place as the "National Concert Hall Quarter" in the current Dublin City Development Plan.

design compliance with CIBSE and BRE guidelines on sustainability.

In-house computer modelling of the building design by Varming enabled various glazing options to be evaluated. Part L modelling demonstrated that a BER of A3 could be achieved, something that was realised in the finished building, along with LEED Platinum Certification. This included measured airtightness of less than 3m^3/hr m^2 (2.76) which was tested to CIBSE standards.

The execution of the BIM process validated the m&e installation design by virtually eliminating on-site stage clashes. A fully co-ordinated "as-built" BIM model was provided as part of the Operating & Maintenance Manual documentation. The BIM screen shots from the model shown here give some indication of the extent of complex co-ordination that was required to accommodate several heavily serviced areas within the building structure.

The principal tenants of Three Park Place are Deloitte, IDA Ireland, CNP Santander, SEAI, SFI and the Marine Institute with fit-outs completed over multiple floors.

The key m&e design challenges addressed included:

(1) Taking full cognisance of the landlord's brief in relation to the co-ordination of tenant fit-out designs and their interfaces with landlord m&e systems;
(2) Maintaining close liaison with existing tenants as might be necessary to route new m&e tenant services from the basement or the roof via the vertical risers.

This complex project was conceived and approved on strict design, installation and cost platforms and was executed under tight quality control to meet fully the client's expectations. The project vision was to achieve the highest standards of m&e performance based on an agreed budget cost, using state-of-the-art engineering design to reduce the carbon footprint and minimise operating costs.

The use of Varming ISO 9001 quality-assured procedures in the execution of the m&e design was critical. Every stage of the engineering design – from concept design, planning, detailed design to tender documentation – was reviewed and signed off before proceeding to the next stage. Similarly, associated m&e budget costs were tracked and signed off at the end of each project stage.

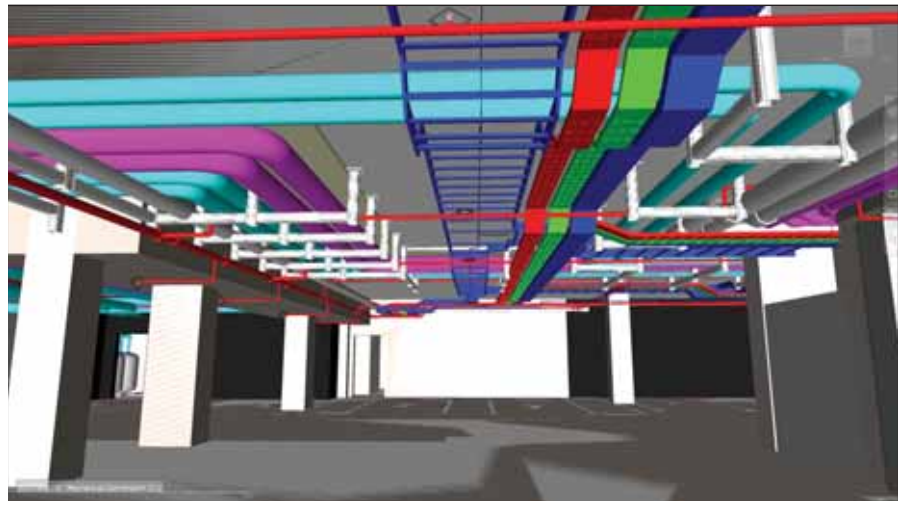


Figure 1: Validation of clash detection.

The design approach applied also subscribed strongly to meeting objectives of energy efficiency in use, along with design compliance with CIBSE and BRE guidelines on sustainability. Execution of building information modelling to validate the design virtually eliminated site installation clashes and, at the end of the project, a fully co-ordinated as-built BIM model was provided as part of the O&M documentation. See Figure 1.

> The building is an excellent example of BIM-aided delivery of a sustainable environment to BER A3 and LEED Platinum ratings.

Comfort cooling is provided by high-efficiency chillers located in the basement (Figure 2) with roof-top heat rejection. Primary energy reduction was achieved by the use of night cooling storage by EPC eutectic phase-change salt, low-energy fan coil motors, variable speed drives, variable frequency drive lifts, high-performance chillers, pressure-dependent flow controller, and comprehensive commissioning flow control salt is regenerated at 60°C by the chillers at

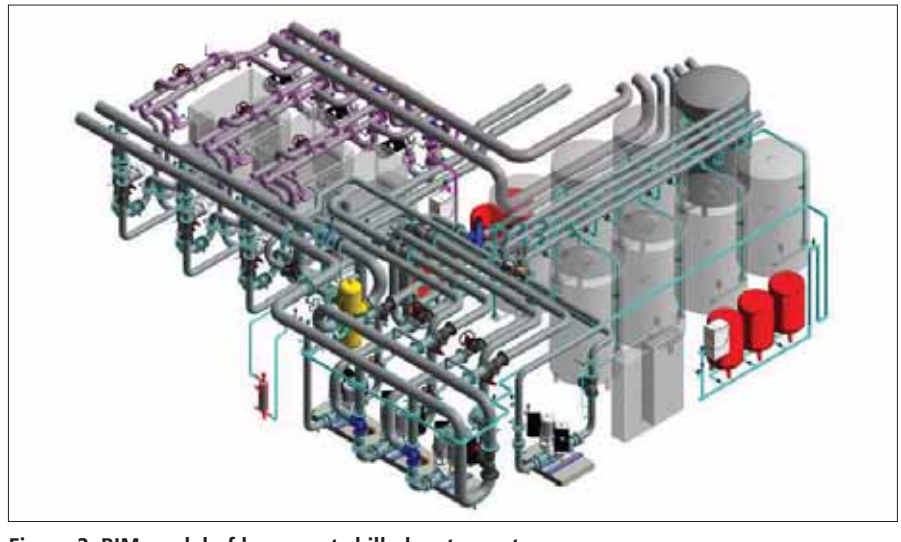


Figure 2: BIM model of basement chilled water system.

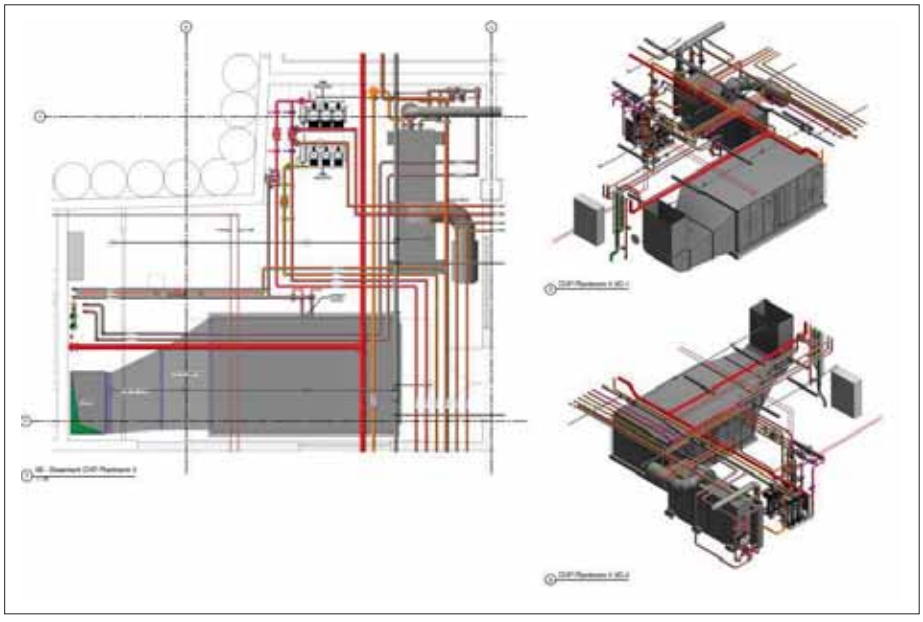


Figure 3: BIM model of CHP plant.

night at low-tariff electricity rates. Energy costs are reduced as the salt provides the cooling requirements to the building during normal working hours. The energy saved will amount to a carbon reduction of 3000 tons per annum.

Key contribution to A3 BER

The installation of combined heat and power plant (CHP) and photovoltaics panels, integrated with the green roof, enhanced insulation and thermally-efficient façade glazing contributed to the achievement of the A3 BER. See Figure 3.

Consistent with project goals of energy conservation, an automatic, controlled, networked lighting and management system was installed to deliver flexible environmental lighting. Typically, each floor has its own individual local area network. Each network is linked to a controller that is, in turn, connected to a central PC. This incorporates enabling features for energy saving, setting flexibility, comfort, monitoring and daylight control.

The impact of a planning condition limiting the extent of roof plant was alleviated by an innovative design decision to lower the plant room slab below the finished roof level, resulting in a lower roof height over the central core where the air handling plant is located. Low-height packaged heating plant was selected, which was lifted, connected and tested on the finished roof. See Figure 4.

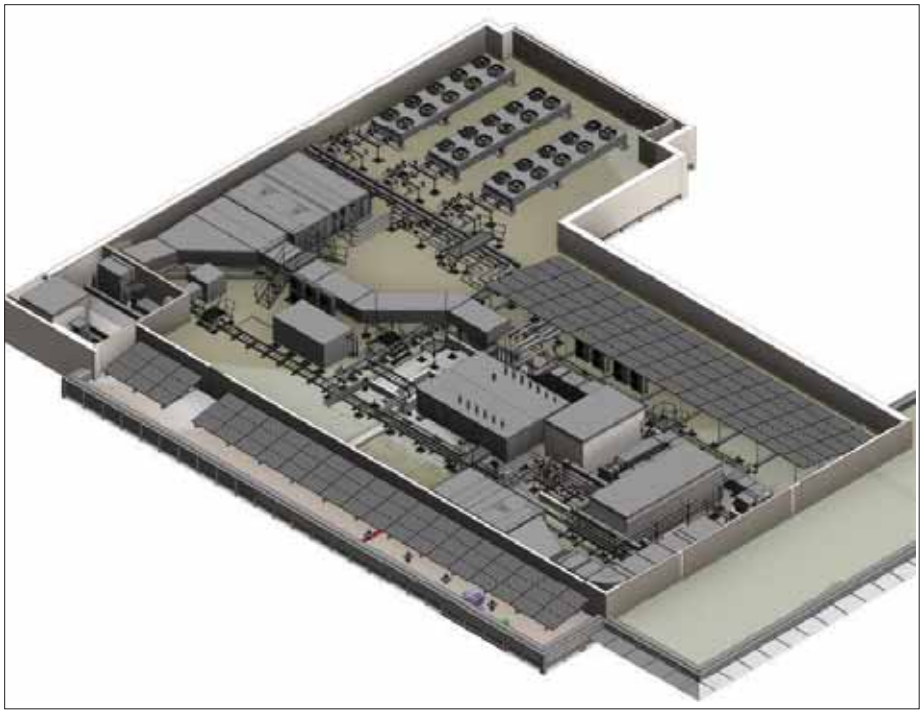


Figure 4: Lower roof level.

The 400mm depth of the false ceiling zone demanded careful co-ordination of concealed m&e services with the wet sprinkler distribution system, which was supplied by a storage and pumping system located at basement level. Chilled water was distributed throughout the building to 4-pipe fan coil units, installed on a density of 1 per 35m, which allows full flexibility for future tenant fit-out modifications.

Varming acted as the M&E Ancillary Design Certifier on the project. In fulfilling their BCAR duties, Varming provided a schedule of proposed inspections to the Assigned Certifier. The inspections were undertaken by Varming engineering inspectors, who also witnessed the m&e commissioning and attended the client handover demonstrations.

The building is designed with an integrated security platform which provides for the adoption of a range of flexible arrangements for the monitoring and control of all physical assets and personnel across multiple locations. These security features include access control, CCTV and intruder detection, along with fire alarm and voice activation integration.

The project procedures required the m&e contractors to attend fortnightly site installation co-ordination and planning meetings throughout the construction stage, and to present equipment manufacturers' submittals for Varming review and sign-off to ensure compliance with tendered m&e detail designs and specifications.

That Varming were successful in delivering to the high design criteria demanded by the Three Park Place brief is evidenced by the award of the 2020 ACEI Design Excellence Award in the Mechanical and Electrical Category. ■

New products invigorate Calpeda offering

"New products are the lifeblood of any industry but, given the importance of water to sustaining people and the planet, they are absolutely critical to the pump sector," says Graham Fay, Managing Director of Calpeda Ireland. "Consequently, Calpeda has a massive R&D spend, the benefit of which is a vast array of innovative new products and systems constantly coming on stream. Here are some of the latest now available from Calpeda Ireland."

Meta water booster

The new Calpeda Meta range is the latest in the evolution of the highly-successful e-idos portfolio. It is a compact, variable-speed water booster set measuring just 146mm by 420mm by 235mm, and incorporating a frequency converter, a pressure transducer, a non-return valve and an integrated pressure vessel IE4 efficiency class. It is a "plug-and-play" solution that makes installation and servicing simple.

GQS 40 sewage and drainage range of pumps

The GQS 40 sewage and drainage range comprises single-impeller submersible pumps, and free-flow (vortex) impeller with vertical threaded delivery port. They incorporate a double mechanical shaft seal with interposed oil chamber to protect against dry-running.

Applications include domestic or industrial wastewater, including dirty water with solids up to 40mm grain size.

e-idos clean water pumps

The e-idos is a range of 5" close-coupled multi-stage clean water submersible pumps. These easy-to-install, "plug and play" compact units incorporate an integrated pressure transducer for automatic control of starting/stopping of the pump when utilisation points are opened/closed, with an integrated non-return valve into the pump suction.

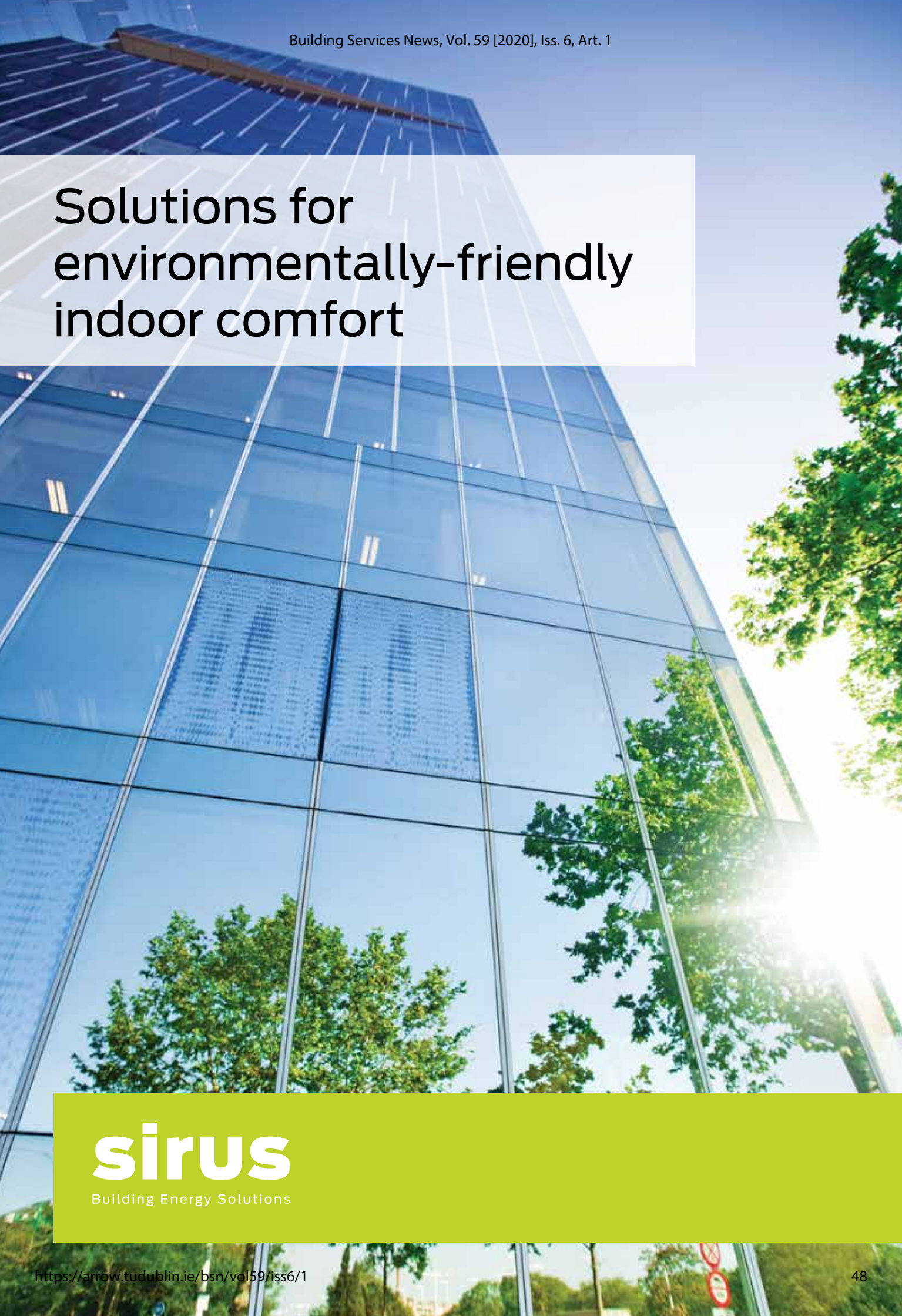
Ideal for water supply from wells, tanks or reservoirs, and for domestic, civil and industrial applications.

GX ZERO submersible pumps

GX ZERO is a range of single-impeller submersible pumps in chrome-nickel stainless steel, with vertical delivery port and suction non-return valve with a capability up to 1mm from the bottom. Applications include clean water drainage/extraction containing solids up to 3mm grain size from tanks, ponds, streams or rainwater collection.

Contact: Calpeda Pumps Ireland.
Tel: 01 – 861 2200;
email: info@calpedaireland.com;
www.ie.calpeda.com ■

Pictured: Calpeda GQS 40 sewage and drainage pumps (left), e-idos clean water pumps (centre top), GX ZERO submersible pumps (centre bottom) and Calpeda Meta water booster.


Solutions for environmentally-friendly indoor comfort
sirus
Building Energy Solutions

sirus

A member of the SAUTER Group

Sirus use cutting-edge total room automation technology to combine comfort and security in a cost-effective and energy-efficient manner. Intelligent use of sensors ensures that lighting, shading, heating and cooling are used only when needed.

We create smart office buildings that seamlessly control lights, air quality, temperature and humidity, maintaining optimum levels to ensure occupant comfort. Occupants can also control their own environment with user-friendly touch room operating units.

When occupants are absent, the systems switch to back economical mode. No interventions are actually required unless the user wants to deviate from the standard program.

As well as the benefits to health and wellbeing, these demand-led systems greatly decrease energy costs over the long-term.

Contact us to discuss your smart building project.

The Well

Unit 2018 Orchard Avenue
Citywest Business Campus
Dublin D24 FR88

01 450 7968

Sirus House

Unit 13 The Westway Centre
Ballymount Avenue
Dublin D12 FW63

01 460 2600

Sirus Cork

Unit 5, Centrepoint
Marina Commercial Park
Cork T12 H7DV

021 431 5552

Martin Keogh
086 81 77 223
Martin.Keogh@sirus.ie

Keith Fitzpatrick
086 77 10 193
Keith.Fitzpatrick@sirus.ie

Pat Guilfoyle
087 35 82 561
Pat.Guilfoyle@sirus.ie

www.sirusinternational.com

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

Hidros leads the way in commercial heat pump surge

Below: Air to water heat pump in a retrofit project in UCD. Working with PowerTherm Solutions and installed by G&J Engineering, this install shows the versatility of the heat pump on all types of project.

"While we all make changes to the way we work and live in keeping with the current pandemic, the industry has also been busy changing the way we design and install heating systems for commercial properties," says James Porter, Sales Director, Euro Gas. "With the introduction of the latest nZEB legislation and the move to a greener built environment, Euro Gas has been busy with consultants and contractors alike, implementing these changes.

"The use of heat pumps in commercial buildings is not a new phenomenon to Ireland, and it is fair to say that their use has increased considerably over the last 12 months. With that in mind I have shared brief details of some of our latest projects featuring Hidros air to water heat pumps. All represent very successful collaboration with consulting engineers and mechanical contractors alike, and confirm the total acceptance of heat pumps for commercial applications."

To learn more about Hidros commercial heat pumps from Euro Gas see https://eurogas.ie/products/heat-pumps/ ■

Two Hidros LHA heat pumps installed on Dublin student accommodation block in collaboration with Laminar Engineering and Axiseng.

Two LZT high-temperature heat pumps producing 65°C hot water to feed an existing system plus provision for DHW on a project in Cherrywood, Co Dublin. Euro Gas is working with G Tech Mechanical having been specified by O'Connor Sutton Cronin.

Hidros LHA 1402 air to water heat pump in Galway City. Euro Gas worked closely with KD Group and Ethos Engineering to deliver this solution.

Pandemic accelerates decarbonised heating but … mixed picture for AC

BSRIA's latest studies provide the most up-to-date assessment of the impact Covid-19 has had on global demand for HVAC and building automation and controls products.

As the extent of the pandemic began to crystallise, a substantial part of the workforce employed in HVAC-related manufacturing in China was ordered to stay in quarantine. As a result, several manufacturing companies could not resume work, new construction projects were at a standstill, and installers were restricted to access sites. While restrictions and the quarantine extended to other countries, delays in the supply of air conditioning and heat pump products piled up during the March-April 2020 period.

Hydronic heating in China

The hydronic heating market in China is partly sustained by the coal-to-gas policy, and this part of the market recovered as soon as the pandemic became controlled with almost all projects carried out as previously planned. Similarly, the real estate market has recovered very fast and the pre-decoration policy is enforced widely. Thus, the project market for wall-hung boilers developed well in 2020 and is likely to keep

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

up with last year's sales volume.

On the other hand, the retail market has been severely damaged by the pandemic as consumers' wages shrunk and they naturally became cautious with their spending. Sales of hydronic heat pumps were also greatly affected in 2020 but demand is expected to recover to previous levels in 2021, boosted by resuming construction activity.

Impact on European market

Looking at the impact of the pandemic on the European markets, suppliers reported similar issues faced in the building sector. Most construction projects carried on at a slower pace while some were cancelled, and production lines at some HVAC manufacturers had to be put on hold for several weeks.

There are many common traits visible in every country, as Covid-19 caused lockdowns, impacted on construction, and triggered economic consequences which in turn diminished consumers' purchasing power. HVAC manufacturers have been closely watching their expenditure, wholesalers reduced their inventories, installers have been staying away from work, and supply chains suffered interruptions. Costs for components, transport and labour crept up, but prices of equipment remained the same, putting a pressure on manufacturers' margins.

Boiler and heat pump sales trends

Nevertheless, the measures in place to pull the market towards more energy efficient buildings and decarbonise heating proved to be successful. Many private households and project owners embraced their new way of living to undertake renovation works. In the meantime, installers took the time to upskill and promote the benefits of heat pumps over boilers. This trend, along with the financial support allocated to replace old heating systems, helped reverse the dip in heat pump sales in the new-build sector.

Overall, sales of heat pumps in France, Germany, Italy, the Netherlands, the UK and Ireland remained on an upward trend. Current forecasts until the end of the year point towards positive results in the main European markets. The package of financial incentives voted under the EU Recovery Fund are foreseen to keep demand growing, particularly in the replacement sector. BSRIA experts forecast 2020 to mark another year of strong progression in heat pump sales with double-digit growth rates likely to be posted in many European countries.

At the same time, the domestic boiler sector has been harder hit with sales reportedly down across quite a number of markets. Globally, in comparison to domestic boilers, sales of commercial boilers were affected to a lesser extent. Some sectors suffered more than others though, with projects in the hospitality market severely affected by the pandemic.

Building automation and controls

Building automation and controls (BACS) have a major role in improving HVAC system efficiencies. Sales of building automation system software have been performing better than the other control product segments so far in 2020, while valve and actuators have been suffering slightly more due to a decline in large projects. Suppliers are also reporting a shift towards more refurbishment work and an increase in service and maintenance activity. The overall building automation market is expected to be down compared to 2019 and will only recover to the previous year's level in 2022.

As a second wave of infections is under way, the uncertainty surrounding the duration and severity of this crisis make it hard to anticipate how a recovery could unfold for the new construction industry in the medium term.

The recent announcement made by the EU Commission to dramatically reduce CO2 emissions by 2050 gives another strong and clear signal in favour of clean energy products. As a result, and with the help of financial support available to homeowners, further growth of renewables in the renovation sector is to be expected.

Mixed AC picture

The world air conditioning market reveals a mixed picture with the pandemic causing trading halts in parts of the world and disrupted global supply chains. BSRIA

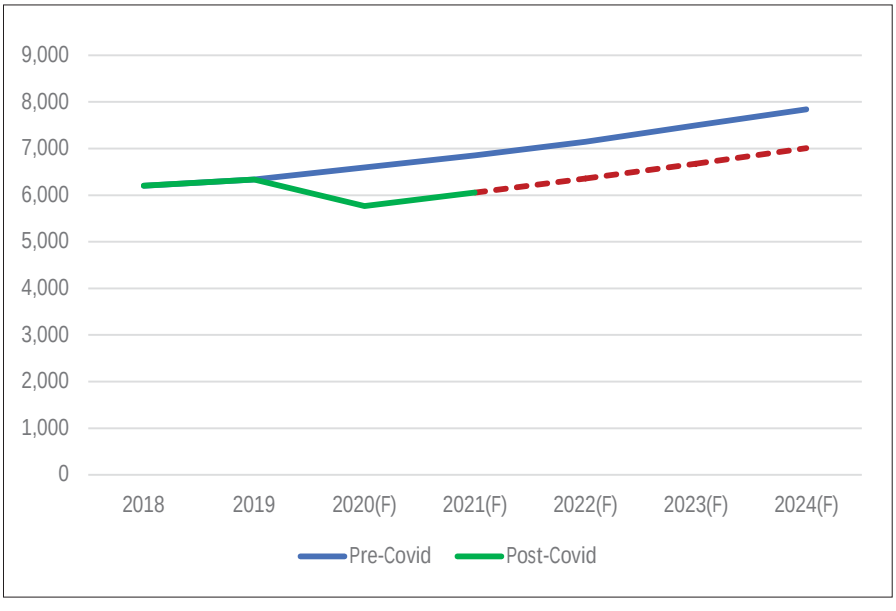


Figure 1 – Global BACS products pre and post Covid-19 forecast (Source: BSRIA).

interviewed key HVAC manufacturers and distributors in 20 major world markets and have consequently revised sales predictions for 2020 and 2021 on individual markets for key products such as splits, VRF, rooftops and chillers.

This new data is included in its latest Global AC Market Study published in September 2020. It provides the most up-to-date assessment of the global AC market performance for 2020, and expectations for the five years ahead.

The supply chain and production were disrupted across the world in the first six months of the year due to pandemic-related lockdowns. Chinese manufacturers closed their factories and shipments of goods came to a halt for several months. Not all countries were impacted in the same time, and not all products have been impacted in the same way. While most countries took a serious sales dive in the second quarter of the year, China experienced a sharp sales decline in the first quarter of 2020, and a gradual recovery from April on.

With many people working from home following Government advice, opportunities were created in the AC residential market, as consumers in many cases invested money saved on transport and leisure activities into having air conditioning installed over the summer. This was especially noted in Europe. Such attitudes have softened the blow and, as with other consumer products, online sales of residential AC products have increased sharply.

The light commercial market has been hit hardest with retail outlets, cafés and restaurants, hotels and other leisure facilities having to close. Typical products that are installed in these applications are large splits (>5kW) and VRF units. The sales fall in the hospitality industry was partly offset by the increased demand from buildings repurposed for healthcare premises, where VRFs with DOAS

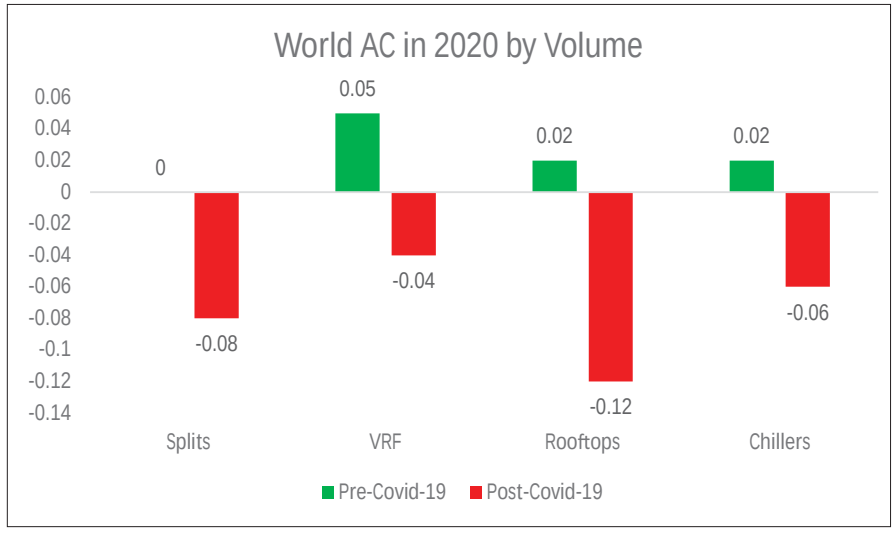


Figure 2 – World AC market by volume in 2020 (Source: BSRIA).

(dedicated outdoor air system) were being installed to meet the required ventilation demand.

Today there is a growing demand for these products for offices where, along with implementing a safe working environment, there is a need to review the air quality and ensure sufficient fresh air in-take. Growth also came from the warehouse sector as the need for them grew in line with increasing on-line sales. In some countries government stimulus investments in the education sector further supported the market.

Overall, products mostly installed in medium to large non-residential projects have taken a deeper sales dive as these projects have often been disrupted by site closures, interrupted supply chains and social distancing rules, as well as absenteeism of migrant workers. Under the current economic climate, a significant number of projects were also postponed or put on hold, according to the HVAC manufacturers.

> There is a greater need for sensors and controls which are integrated to BACS systems to monitor the air quality.

New AC opportunities

Although the pandemic created challenges for HVAC companies, opportunities also opened up. In residential and non-residential applications there is a strong focus on further improvements in indoor air quality. This has created a particularly high demand for products which can self-clean, ventilate and offer air purification. Many manufacturers have now introduced new product lines to meet the demand. Going forward this is expected to become a trend.

In commercial applications, especially those with DX systems, the introduction of higher air volume is introduced with DOAS, zoning, filtration of recycled air and cleaning air ducts to reduce the risk of cross-infection in buildings. There is also a greater need for sensors and controls which are integrated to BACS systems to monitor the air quality and report on issues with any failing equipment.

Although there are many products, solutions and software in the market to achieve optimum IAQ, there is no market data which looks at the whole market. BSRIA's Worldwide Market Intelligence team is currently working on a brand new study in this area.

For information on these and other BSRIA publications contact: wmi@bsria.co.uk

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

Panasonic ventilation unit combining comfort and energy savings

Panasonic has added an efficient heat recovery ventilation unit for residential projects to its portfolio that improves air quality inside the home and maintains a healthy level of relative humidity. It is part of Panasonic's ongoing commitment to developing products offering greater energy efficiencies, that contribute to the delivery of NZEB buildings.

Today's new homes are being constructed to high standards with almost airtight walls, windows and doors, and no structure gaps. While this minimises uncontrolled ventilation and draughts, and provides increased energy efficiency, homes still need to have good-quality indoor air and an efficient ventilation system. Panasonic's new PAW-A2W-VENTA unit is the answer.

This new heat recovery ventilation unit is designed not only to provide good indoor air quality, but also to recover heat that would otherwise be lost through ventilation. This leads to lower heating requirements and helps meet the Energy Performance of Buildings Directive (EPBD), making it ideal for low energy homes.

Space-saving solutions

Designed for areas up to approximately 140sq m, the compact unit can be installed with Panasonic Aquarea air-to-water heat pumps to provide an ideal solution for heating, cooling, ventilation and DHW. As it saves space by combining solutions, it is ideal for homes with limited space.

Two models are available to ensure easy and neat installation – one offering the supplied air on the left side of the unit, and the other on the right side. It therefore sults any installation requirement. Both feature a high energy efficiency rotary heat exchanger with EC technology fans, and these provide a moisture transfer function to minimise condensation in supply air during winter.

The Panasonic PAW-A2W-VENTA heat recovery ventilation unit.

The new PAW-A2W-VENTA unit can be combined with the Aquarea all-in-one compact system, or it can be placed on top of a DHW square tank with either Aquarea mono- bloc or Aquarea bi-bloc. The ventilation system can also be conveniently placed on any wall using Panasonic's wall brackets.

User friendly interface

In an ever-growing digital world, Panasonic recognises the need for convenience and simplicity, resulting in the ultimate user-friendly interface for the system. All settings and features of the PAW-A2W-VENTA are accessible via the easy-to-use control panel that is integrated into the front cover. The option to connect one or more external control panel is also available with up to 10 controls possible in one system.

Other benefits of the ventilation unit controller include a weekly schedule for fan and temperature setpoints throughout the week, as well as a useful menu for filter maintenance that clearly displays the remaining filter time.

If combined with the Aquarea heat pump, the two systems can be managed with just one controller. The system has a host of useful features such as a manual and an auto mode, or the ability to choose preferred settings from the pre-configured user modes.

How does it work?

Designed to provide filtered fresh air into the home, the highly-efficient ventilation system also maintains high thermal comfort. The process can be broken down into three sections:

(1) The ventilation unit extracts air from wet areas (kitchens, bathrooms, etc);
(2) Fresh outdoor air is drawn into the unit via the pipe system. Here, 84% of the heat from the extracted air is transferred to the supplied air via a heat exchanger;
(3) Fresh air is then supplied back to dry areas of the house (living room, bedrooms, etc);

Contact: Vincent Mahony, National Accounts Manager, Panasonic Ireland. Tel: 087 – 969 4221; e: vincent.mahony@eu.panasonic.com; www.aircon.panasonic.eu

Robert O'Neill, Production Manager and Shaun Gillen, Sales Manager OEM/HT, pictured with one of the supports which is 1.9 metres in width and capable of supporting a pipe with a weight of 3.2 tonnes.

Phenomenal phenolic support from TIDL

Thermal Insulation Distributors Ltd (TIDL) has manufactured one of the biggest ever phenolic pipe supports made in Ireland. It is one of a large order of similar-sized, unique supports being made for use in a major Irish project currently under construction. Each one measures 1.9 metres in width and is capable of supporting a pipe with a weight of 3.2 tonnes.

Even bigger supports are also being manufactured by TIDL for the same project at its manufacturing facility in Ballycoolin, Dublin 11. The largest of these will be over 4 metres in diameter and will be capable of supporting a pipe with a weight of 15 tonnes. A support product of this scale is unique and it was specially designed and engineered by TIDL to provide a safe, workable and appropriate solution to meet the demanding requirements of the project.

Shaun Gillen, Sales Manager, TIDL told *Building Services Engineering*: "TIDL is proud to be the first in Ireland to produce pipe supports on this scale and to work with our customers to provide solutions to their engineering requirements. The process of designing and producing the supports continued throughout the pandemic with many virtual design meetings, and later production works, to complete the supports."

TIDL has invested heavily in new technology and machinery and can now design and manufacture solutions for complex requirements such as the chamfering of each support to allow for heat tracing cables or other bespoke requirements.

Employing more than 60 people in Ireland, TIDL offers a wide range of solutions for insulation requirements in areas such as H&V, fire protection, high temperature applications, noise control, bespoke solutions for original equipment manufacturers and bespoke removable insulated jackets within its Thermal Covers Division. As part of the Ipcom Group, TIDL has access to a wide range of expertise and products throughout Europe to provide solutions to individual insulation requirements.

Paudie Gillen, Chief Executive Officer, has over 30 years' experience in the insulation industry, and he leads an experienced team of product specialists who can provide solutions to individual insulation requirements, along with technical support and design advice. Service longevity with TIDL is commonplace with various team members being with the company for 20-25 years.

The TIDL portfolio is extensive and comprises a mix of own-manufactured ranges along with market-leading brands such as Rockwool, Armacell, Paroc, Lamatherm, Isover, Foamglas, Knauf, Kingspan, Sager and Tarecphen.

The National Standards Authority of Ireland (NSAI) has certified TIDL's Quality Management System to IS EN ISO 9001:2015. This is a significant mark of approval as it covers TIDL's entire operation, from the manufacture, sale and distribution of thermal insulation, fire stopping and noise control products through to specialist building products and cut insulation products for original equipment manufacturers (OEM).

Contact: Shaun Gillen, Sales Manager, TIDL. Tel: 01 – 882 9990; sales@tidl.ie ■

MASTERTHERM

the commercial heat pump specialists

A new name has entered the Irish HVAC market in recent years. MasterTherm Ireland is a part of the MasterTherm Europe Group that designs, manufactures, installs, monitors and maintains heat pumps for all categories of use. Bespoke design as well as quality and longevity lie at the heart of the MasterTherm heat pump offering. From the earliest stages of projects design is key to delivering maximum efficiencies allowing engineers and contractors to meet or exceed client expectations.

Only the highest-quality components are used, thereby ensuring a long life-cycle and optimal performance. In addition, MasterTherm's unique features such as electronic expansion valve (EEV), desuperheater, online system optimisation and monitoring, data logging and high temperature heat recovery are only few of many innovative developments in heat pump technology made in recent years. These features increase efficiency (COP, SCOP) and reliability and also enhance the lifetime of the units.

The MasterTherm research and development team continually advances the functionality of equipment to meet the ever-changing market requirements, in addition to facilitating compliance with all regulations governing Ireland's 2030 targets, and the objectives set out in the Climate Action Plan.

If required, systems can produce several thousand kW of heat per hour while the option of modular solutions provides great versatility and reliability.

As one of the largest specialist heat pump manufacturers in Europe, MasterTherm has already installed thousands of units in over 20 countries, many of these being in Ireland where the company has a dedicated Irish Branch operation based in Ballycoolin, Dublin 11. It has secured some notable projects across a mix of application types and the following examples illustrate the versatility and scope of the portfolio.

• *University Hospital Limerick* – Here six 35kW BoxAir inverter 60i air to water heat pumps and two 60kW AquaMaster 75HX water to water heat pumps were installed in a new, 24-bed dependency unit. It was the first such hospital installation in Ireland and provides all the space heating and DHW requirements for the entire building. SCOP heat is 4.5 while it is also fully nZEB compliant;

• *St Michael's House Leisure Centre, Dublin* – Here three 35kW BoxAir inverter 60i air to water heat pumps provide heating for the pool water and AHUs, while also pre-heating the DHW. SCOP heat is 4.4;

• *Enable Ireland HQ, Dublin* –This project comprised six 35kW BoxAir inverter 60i air to water heat pumps to serve two radiator circuits and new DHW cylinders as the primary heat source for this 5,500 sq m building. SCOP heat is 3.9 and it also involved a new BMS online monitoring system with the AHU circuit and DHW assisted by boilers.

• *Cork School of Music (CIT)* – Eight 100kW heat pump units which provide cooling (at ΔT 12>6°). Chilled water is used for air conditioning and dehumidification, keeping the internal humidity of the building at a constant 55rH. Typically heat would be rejected into the atmosphere with standard chillers. MT systems reuse rejected heat in LPHW circuits, serving underfloor heating and AHUs. System also heats domestic hot water in calorifiers via desuperheaters at temperatures exceeding 70°C without compromising COP/EER of the system. Excess heat not used in the heating system is rejected via a dry cooler. System Output – 600kW cooling 720kW heating; combined COP and EER from 6.2 < 9.4.

Once a project is commissioned and handed over, MasterTherm continues to monitor and optimise the system over its lifespan. Heat pumps connected to the Internet are continually monitored by the company's engineers, resulting in extended warranties of up to seven years for these installations.

All heat pumps can be connected to the internet. Users have the ability to control and monitor units from the web, iPad or mobile phone (android and iOS).

Contact: MasterTherm Heat Pumps. Tel: 01 – 899 1721; email: info@mastertherm.ie; www.mastertherm.ie ■

Lukas Kadlik, Technical Director, MasterTherm with John Randles, Head of Delivery, Sustainable Energy Authority of Ireland (SEAI), Paddy Sweeney, Managing Director, RIEL and Sarah Hewitt, St Michael's House Leisure Centre Manage, pictured at the St Michael's House installation.

Novair CTA air handling units ensure the highest performance with the lowest running costs.

Novair CTA customised air handling units

CTA is the wide range of customised air handling units from Novair. It covers airflows from 0.3 m³/s to 40 m³/s (1,000 m³/h to 143,000m³/h) and is highly configurable in every aspect, from layout and components through to performance. All CTA units and internal components are compliant with ErP EcoDesign 2018 LOT6, UNI EN 1886, UNI EN 13779, EN 779 /EN ISO 16890 and are also certified by Eurovent.

Casing construction of the CTA range, which uses the "thermal break" profile, achieves classes T2 for thermal transmittance, TB2 for thermal bridging, L1(M) for airtightness, F9 for filter bypass leakage, and D1 for casing strength. Panels are of a double-skin, sandwich construction and come in thicknesses of 46mm, 50mm, and 63mm with either polyurethane or mineral wool insulation. There is also a wide range of panel materials and treatments to choose from.

Units are supplied complete with galvanised steel base frames in a range of sizes. These can be specified with a zinc magnesium coating if corrosion-resistance is required. CTA AHUs can be designed in either side-by-side or stacked configurations.

The Novair CTA AHU family consists of five product lines as follows:

- CTA: 36 models, 0.3m³/s to 31m³/s (1,000 to 112,000 m³/h);
- CTA Flat: 23 models with reduced height, 0.5m³/s to 40m³/s (1,800 to 143,000 m³/h);
- CTA Squared: 24 models with reduced width, 0.3m³s to 26m³s (1,100 to 92,000 m³/h);
- CTA Vertical: Ten models in a vertical configuration, 0.4m³/s to 8m³/s (1,500 to 28,400m³/h);
- CTA Modular: Five models with modular construction, 1m³/s to 8m³/s (4,500 to 28,000 m³/h).

This diverse range of AHUs ensures that there is a CTA for every design requirement. Novair CTA AHUs have been successfully installed in a range of applications, from industrial and retail, to hospital and pharmaceutical. All CTA AHUs used in hospital installations are fully compliant with HTM 03-01.

Units can be specified with a wide array of EcoDesign 2018 LOT6-compliant internal components and heat recovery can be achieved through the use of a thermal wheel, plate exchanger or closed-circuit recovery coils. Thermal wheels can be either condensation type, enthalpy type, or absorption type wheels, and come with purge sectors as standard.

Counter-flow plate heat exchangers can be specified in several configurations, and closed-circuit recovery coils can be selected with a range of materials and treatments. New high efficiency Ziehl Abegg EC plug fans with IE5 motors can be selected for most units, in addition to IE3 offerings from Nicotra Gebhardt. A prewired factory fitted controls package can also be included as an option. Panel and bag filters can be either side or front withdrawal, and units can be specified with HEPA filters if required.

Novair has over 20 years experience in the design and manufacture of AHUs and is part of the GI Industrial Holding Group of companies which also includes Clint. It has several product development and manufacturing facilities in Italy and Hungary, and has a presence in numerous countries throughout the world.

Contact: Séan Gorry or Carol Malone, Core Air Conditioning Ireland.
Tel: 01 – 409 8912;
email: sean@coreac.com;
carol@coreac.com;
www.coreac.com

LIGHTING

'Renovation must always include lighting'

LightingEurope has issued a statement strongly supporting the call in the EU Renovation Wave Initiative just published to scale up renovation rates across the European Union.

"We can only agree with Vice-President Timmermans that we need everyone in Europe to have a home they can light, heat, or cool without breaking the bank or breaking the planet," said Ourania Georgoutsakou, Secretary General of LightingEurope (below). "However, we regret that there is no clear reference to lighting in the main RW Communication just published by the Commission, in light of the benefits lighting can deliver not only in terms of energy savings but also in creating both safe and quality indoor environments."

In support of this statement Georgoutsakou made these points:

- Europe's lighting industry already has the innovative and energy efficient technologies to hand, ready to install;
- Properly-designed and well-coordinated lighting systems are one of the most cost-efficient ways to reduce energy consumption and CO2 emissions. The European Commission estimates that LED-based lighting systems could save the EU up to 48-46 TWh of electricity annually by 2050;
- Better indoor lighting is also one of the major factors impacting people's wellbeing. For example, students in a classroom with bright white lights score 14% higher than students working in a poorly-lit one;
- UV-C is an established working technology for disinfection that must be part of the design of safe healthy indoor spaces. This technology has been proven to inactivate, without exception, all bacteria and viruses against which it has been tested. It is widely used today to disinfect water, air, and surfaces in industrial, commercial, medical, public and residential environments.

Georgoutsakou maintains there cannot, and should not, be any renovation of buildings in Europe without upgrading the lighting installations. To grasp the full benefits of better lighting as part of the EU Renovation Wave, LightingEurope recommend in particular:

- The use of LED lighting, in combination with controls and sensors;
- A full renovation of luminaires that include controls and sensors, with a minimum Smart Readiness Indicator (SRI) level. The SRI should also be applied across Europe to maximise its potential for energy savings and a better indoor environment;
- The design of safe indoor spaces that includes the installation of UV-C disinfection technologies, as a means not only to address the current COVID-19 pandemic, but also more generally and in the longer term , to help ensure healthy indoor environments;
- The introduction of mandatory minimum requirements on Indoor Environment Quality (IEQ);
- Access to public financing should be subject to the fulfilment of certain conditions. An obligation to include lighting renovation to obtain full subsidy should be introduced.

See www.lightingeurope.org ■

FULL RANGE, FULL BENEFITS.

OUR NEW PRODUCT PORTFOLIO.

APPEALING. DISTINCT. FUNCTIONAL.

From shops and hotels through to industrial production halls – LEDVANCE's expanded selection of lighting solutions offer the right solution for various environments. This is because our entire range for standard applications combines technological and design innovations with proven strengths: great value for money, simplified installation and a guarantee of up to five years.

LEDVANCE.IE

LEDVANCE

LIGHTING PROJECT PROFILE

Dublin City University O'Reilly Library.

Practicalities of LED retrofitting

DCU project excellent exemplar

While the theory and rationale behind LED retrofitting is well-established and much-debated, there is far less information published on the practicalities of carrying out such projects. To redress this imbalance, *Building Services Engineering* recently spoke with Stephen Weir, Electrical Services Director, McKeon Group, to discuss the many LED retrofitting projects he has managed.

To begin, what is LED retrofitting?

In its simplest format it is the replacement of older, generally fluorescent type lamps and luminaires of which there are still a significant number in operation, especially in education and commercial buildings. While there is an ongoing effort to address the situation, it amazes me how many buildings are still running non LED type luminaires. What's even more disturbing is that these luminaires continue to be maintained rather than the big picture view being taken and a decision being made to replace them with newer, more efficient fittings. This is despite considerable incentives to do so.

For instance, the SEAI Better Energy

Stephen Weir, MCIBSE IEng, Electrical Services Director, McKeon Group.

Grant Scheme includes commercial properties under its lighting-related grant aid programme. This is a pioneering approach as similar grants in the UK are only available for domestic type projects. Indeed, it is commercial properties where LED retrofitting is most beneficial and, as a global view, where energy savings can be optimised by their installation.

What are the key issues?

At the outset, and most importantly, is having a client with the foresight to see the long-term benefits of replacing the lighting systems in their building(s). Dublin City University is an excellent example of such a client and our experience of retrofitting the lighting in the multistorey carpark, O'Reilly Library, Sports Centre and Lonsdale buildings with almost 10,000 LED luminaires were highly successful.

Having a comprehensive and accurate site survey of existing luminaires is also vital and the critical starting point in the design process. It is essential to understand what type of luminaire is required to replace the existing unit, whether it is a suspended, downlight, modular or other type of luminaire. This ensures that the contractor undertaking the project has a clearly-defined list of all luminaires to be replaced, and what they are to be replaced with. Getting this wrong can have major consequences for the project outcome, both practically and financially.

M&V (measurement and verification) is essential. An M&V study must be completed on the building's baseline loads, along with lighting loads, to ensure there are verified primary energy savings as confirmation to the retrofitting process. This allows for post-completion analysis on what the genuine savings are, rather than just tabulated data.

What are the funding challenges?

As with any funding, the SEAI grant scheme does have its limitations in and around a set number of parameters which must be complied with. All luminaires to be installed must be on the Triple E Register and, although it should not prove to be, this is possibly one of the more difficult parts of the process. For me, luminaire selection for such projects must focus on product quality. I expect them to have a minimum 5-year warranty, optimised L&B ratings and to offer value-for-money cost wise.

However, the real issue lies in that every single luminaire and variant of each must be defined on the Triple E Register with its own individual LIG code. This can pose problems for manufacturers and consequently that product's selection. While the luminaire may have excellent L&B ratings, be of high quality and meet budget criteria, that particular luminaire may not yet be on the Triple E Register because manufacturers upgrade their fittings on a very regular basis. I can understand the manufacturers frustration on this matter, and thankfully we have worked very successfully in this instance with Ledvance, Tamlite and a number of other manufacturers.

Nonetheless, and understanding that inclusion on the Triple E Register is part of the selection process for grant approval for public procurement projects, it is a matter that needs to be addressed. Perhaps this is an issue that manufacturers and the SEAI could collaborate on to resolve the problems associated with it.

What other challenges arise?

Regarding the actual installation, there are a number of issues that arise. In the main they tend to be in and around either the condition of the existing cabling infrastructure or indeed emergency lighting which does not fall under the SEAI grant scheme. This is a key consideration to the success of any lighting project as we, as the contractors, are responsible for certifying our element of installation to an existing cable infrastructure.

While most emergency lighting installations are now designed with stand-alone luminaires rather than combined, this is still an opportunity for the client to upgrade the emergency lighting system also. Understandably, this is also budget-dependant as it cannot form part of the grant application.

Controls are another opportunity where there can be further development within these projects. Often there is little to no localised control or simply a contactor arrangement allowing "master off "of all luminaires at the end of the night within the existing control system. Allowing for daylight dimming and absence detection will not only provide for an optimised energy reduction, but will also add to the comfort and safety of those using the building.

Having now retrofitted over 12,000 luminaires through a multitude of projects, I have come across many of the practicalities as discussed above. It still excites me to see not only the final energy reduction through verified M&V, but also the delight end-users experience on the upgrading of luminaires and lighting quality. However, an additional unseen issue in many instances is that the new lighting quite often highlights the need to replace carpet, or to re-paint parts, if not all, of the building.

Interior image showing a sample of the lighting inside the library.

What can the client expect?

There are numerous factors that influence what energy reduction a client can expect, such as building occupancy, controls type and existing luminaire type whether it be T8 or T5 type lamps. One of the most successful I have experienced is the Dublin City University multi-storey car park where we utilised individual sensors built into each luminaire. Centre driving line luminaires are programmed to be on at 20% at all times, and to then illuminate to 100% when a car or person passes under them. Luminaires over each parking bay only switch on in the event of a car or person being under them. The pre-existing fluorescent T8 luminaires, along with minimal existing control, meant that year-on-year energy usage was reduced by 421,794kWh. This was a huge success for the campus and indeed all involved in the project.

What future funding models to you foresee?

It will be interesting to see over the coming years if the current grants will still be available, or if more performance-type contracts are to be implemented whereby finance is offered by the supplier. Most important either way is that the quality of the luminaire remains a prime requirement. I have seen far too many LED luminaires installed that were of poor quality and efficiency, albeit not under the Better Energy grant scheme but more likely under a different level of contract.

Also, are we coming to the end of the LED lighting revolution phase? It is now time to seek out newer technologies such as POE lighting and higher-efficiency LED lighting. Whatever the answer is I look forward to investigating and implementing these technologies as they come about, and being able to offer them to our clients. ■

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

‘Superior, Performance and Value’ from LEDVANCE

LEDVANCE’s expanded range of tailored lighting applications combines wide product choice with smooth customer service. New Tunable White, RGBW and RGB LED strips, as well as LED drivers, provide installers with an exciting scope of products to choose from, with clear product classification into “Superior”, “Performance” and “Value” simplifying the search.

In addition, LEDVANCE offers technical, planning and installation support with an online LED strip configurator and comprehensive training platform. The extended range is now available from wholesalers nationwide. The system with dynamic LED strips now features RGBW and RGB versions, allowing lighting system designers effectively create accents in any ambience.

With Tunable White, it is easy to switch between activating light for work and atmospheric warm light. The system solutions, consisting of flexible LED strips, drivers and accessories, can be easily configured, combined and installed. They come with up to five years guarantee.

Meanwhile, the new DALI-2 drivers now support a greater range of combinations and applications. They can accommodate large installations, such as illuminating entire shopping centres, offices and hospitality facilities, or they can simply light up stairwells, book cases or showcase retail products on shelves.

Sublime service for installers

Installers benefit from additional support like the quick and intuitive LED Strip System Configurator online at www.ledvance.com/led-strip-configurator. In just a few quick steps, they can define the lighting requirements (e.g. length to be illuminated, light colour and brightness), mounting type (indoor/outdoor for IP protection), accessories, operating mode and drivers. The configurator then automatically generates an overview with all the necessary components and useful information about mounting. Following the option to manually adjust the items on the list, the installer can directly order the parts.

In addition to the online configurator, LEDVANCE offers a new, intuitive online training portal for lighting projects featuring a variety of application-oriented eLearning courses. Installers can register at training.ledvance.com and directly benefit from the training.

LEDVANCE LED Strip lighting

Three classes fits all

The LEDVANCE LED strips are available in three different categories – the Superior Class contains the highest quality products for professional and industrial applications. This includes major and prestige projects for indoor, outdoor and wet areas, as well as applications exposed to salt mist and high levels of UV.

The Performance Class is the core portfolio for high-quality demand-based products. Its products are the solution for most lighting needs. They are suitable for semi-professional applications like minor projects for indoor, outdoor and wet areas.

Value Class offers a good combination of strong performance and attractive prices. General applications include small, semi-professional lighting projects for indoor, outdoor and wet areas.

The product range also includes different profiles, covers and LED drivers to various accessories, control units, touch panels and remote controls for dynamic LED strips. All LED strips are pre-wired on both sides and are easy to shorten, if necessary. All components are perfectly matched to one another but can also be combined with most products from other established manufacturers.

The product range of the LEDVANCE LED Strip System covers a wide variety of requirements and can be used as a component in almost every lighting project.

LEDVANCE lighting solutions come in environment-friendly cardboard packaging with all relevant product information immediately visible on the outside of the box.

Contact: Stevie Young, Sales & Projects Manager, LEDVANCE Ireland. Tel: 086 - 600 1291; e-mail: s.young@ledvance.com ■

Lighthouse The Construction Industry Charity CLUB

Construction Industry Helpline
1800 939 122
0345 605 1956

Supported by

We are the only charity that is 100% dedicated to the *mental, physical and financial* wellbeing of our construction workers and their families in Ireland and the UK.

Our mission is that no construction worker or their family should feel alone in a crisis.

We are achieving that mission through the delivery of a variety of completely free resources to support our construction community.

RESOURCES FOR YOU AND YOUR COMPANY

24/7 Construction Industry Helpline and Helpline Packs

Our 24/7 Construction Industry Helpline provides free and confidential support on a huge variety of mental, physical, and financial wellbeing issues for all construction workers and their families.

To publicise our helpline to your employees and subcontracted workforce you can purchase one of our helpline packs. Available at low cost, they contain wallet-sized helpline cards that can be distributed as you wish and A2 posters that can be placed around your office or sites so that people are aware of the helpline number.

ORDER PACK

Helpline App

Our free Construction Industry Helpline app is a preventative tool, and helps to build resilience in the areas of mental, physical, and financial wellbeing. Each section of the app offers learnings about a variety of conditions and issues, self-assessment tools, coping strategies and referral pathways to access expert advice and support in their locality.

WATCH OUR VIDEO EXPLAINING MORE ABOUT THE APP

DOWNLOAD THE APP FOR **FREE**

APPLE DOWNLOAD

ANDROID DOWNLOAD

Free Mental Health and Wellbeing Training

A crucial element of our strategy to provide pro-active support to the industry is to ensure the widespread availability of free construction focussed training programmes. These range from hour long interactive wellbeing sessions through to the half day and full two day MHFA England approved Mental Health First Aider courses.

VIEW THE FULL LIST OF COURSES

Building Mental Health Programme

As one of the founder members of the industry's Building Mental Health Programme, we have developed an online portal of information that provides free information and resources to help you encourage a positive mental health culture in your organisation. It includes a five step framework for better mental health and includes downloadable tool box talks and videos to support your activities.

Building Mental Health

START YOUR JOURNEY

Building Services News, Vol. 59 [2020], Iss. 6, Art. 1

RIAI Architecture Awards 2020

RIAI Awards 2020 celebrate Irish design at home and abroad

The winners of the 2020 RIAI Architecture Awards were announced on the RIAI Website, the traditional all-industry celebration having gone by the wayside because of Covid-19 restrictions. The awards celebrate work carried out by members of the Royal Institute of the Architects in Ireland (RIAI) members, both in Ireland and overseas, and highlight the contribution architects make to society for everyone's benefit.

The prestigious architecture awards were first held in 1989 to celebrate excellence in the built environment and the work of RIAI-registered architects. This year there were 12 Award winners across 11 categories, including Adaption & Re-use, Conservation, International, Learning Environments, Living (Homes), Public Space, Wellbeing and Workplace. Winning projects were located in Dublin, Cork, Connemara, Drogheda, London and Paris.

The conversion of an historic building on Dawson Street to both residential and commercial use by Paul Keogh Architects was the winner in the Adaptation and Re-use category, while the restoration of Leinster House by the Office of Public Works Architectural Services received the top award in the Conservation category. The Living category saw awards going to a coach house renovation by Culligan Architects, and a house on the Connemara coastline by A2 Architects. The transformation of the South Presentation Convent site in Cork, winner in the Urban Design category, was described by the judges as "an exemplar urban renewal project".

Woodruff Restaurant in South County Dublin, where the architect "inventively and sensitively used a modest budget" won the Fit-Out/Workplace category, with the Candle Community, a therapeutic space for young people in Ballyfermot, winning the Wellbeing Category.

Grafton Architects were double award-winners in both the Learning Environment category for their work on the Toulouse School of Economics as well as the International category for Institut Mines-Telecom, outside Paris.

The Sustainability award was given to McGurk Architects and Cullinan Studio for their work on the Bunhill 2 Energy Centre, a world-first scheme in Islington, London, that uses waste heat from the London Underground to warm homes, leisure centres and a school.

Full details and images of all the winning projects are available at www.riai.ie.

The RIAI Public Choice Award had already been announced back in June of this year. The winning submission, which received over 12,000 votes, was Tooting Meadow, a development of 15 high-quality homes for the elderly and families. The housing scheme, designed for the North and East Housing Association, was developed on a brown-field, infill derelict site, in Drogheda, Co Louth.

Ciaran O'Connor, RIAI President said: "Architects bring insight and understanding to a project, ensuring that not only is it aesthetically pleasing but also functional, addressing the client need, both now and into the future. The shortlist of entries for this year's awards demonstrates both the scope and scale of projects being delivered by RIAI members, all of which combine creativity and a commitment to quality design. I'm delighted to see the restoration of Leinster House as a category winner, a project that was undertaken by my colleagues in the OPW. Quality design must be at the heart of our public spaces and buildings and in the protection and enhancement of our cultural heritage".

Liam Tuite, FRIAI, Chair of the Jury said: "The jury had a challenging task to pick winners in each category. The shortlist was made up of exceptional projects including residential homes, commercial spaces, a youth centre, heritage locations and public spaces. It is not easy to put yourself forward to be judged by a panel of your peers and I'd like to thank both my colleagues in the profession, and their clients, for sharing with us all of these wonderful projects. All of the submissions presented underline the value that Irish people place on quality design in our build environment."

Winner: Adaptation and Re-use

B & C Dawson Street. Architect: Paul Keogh Architects.

Winner: Conservation

Historic Leinster House. Architects: OPW Architectural Services.

Winner: Living

House, coach house and garden. Architects: Culligan Architects.

Winner: Learning Environments

Toulouse School of Economics. Architects: Grafton Architects.

Winner: Sustainability

Bunhill Energy Centre. Architects: McGurk Architects/Cullinan Studio.

Winner: Wellbeing

Candle Community. Architects: McGarry Ní Éanaigh Architects.

Winner: Public Choice

Tooting Meadow. Architects: McKevitt King Architects.

Winner: Urban Design and Masterplanning

Nano Nagle Place. Architects: JCA Architects.

Winner: Research

Free Market. Architects: The Free Market Team.

THE OBTUSE ANGLE

PAT LEHANE

Covid? … what I'm actually suffering from is NPHETitis!

Forgive me for being self-indulgent this month but, in trying to absorb the Nphet words of wisdom throughout this Covid pandemic, I'm afraid I've ended up suffering far more debilitating symptoms from NPHETitis than I did when I contracted Covid back in March. Talk about the so-called cure being worse than the disease!

Why am I confused?

No social/family gatherings should take place, with exemptions to this for weddings and funerals – *Since when is a wedding or funeral not a social gathering?*

Public transport will operate at 25% capacity for the purposes of allowing those providing essential services to get to work – *If they are providing essential services surely they should have 100% support, not a drastically-reduced service!*

There should be no organised indoor or outdoor events – *Except of course for weddings or funerals!*

Bars, cafes, restaurants and wet pubs may provide take-away and delivery services only. Wet pubs in Dublin remain closed – *Can someone please explain the difference between a wet pub in Dublin and a wet pub located outside of Dublin?*

There will be a penalty for any movement outside 5km of home – *Unless, of course, you happen to be attending that wedding or a funeral!*

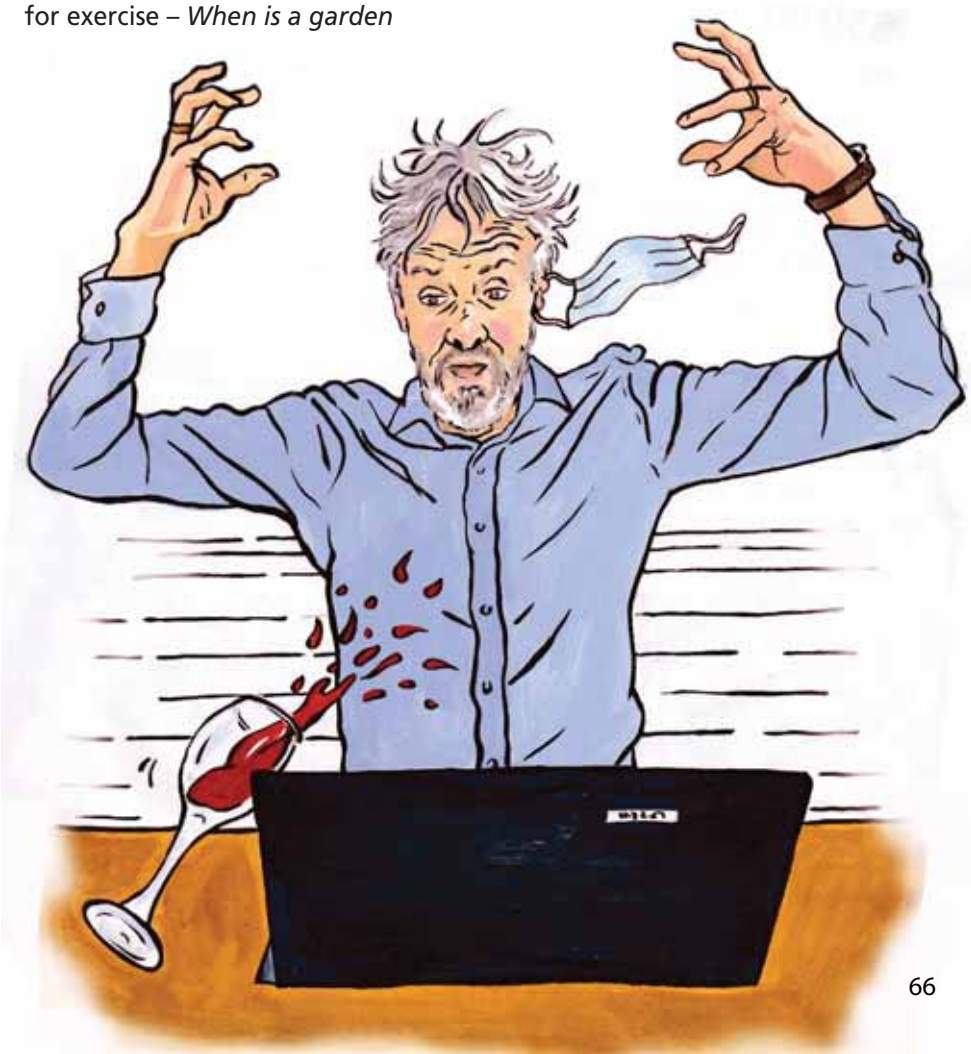
No training or matches should take place, with the exception of professional, elite sports and inter-county Gaelic games, horse-racing and greyhound racing, which are being permitted to continue behind closed doors – *These represent multiple-people gatherings, yet a game of tennis between just two people, or perhaps squash, maybe even chess, cannot take place behind closed doors!*

It is possible to meet with one other household in an outdoor setting which is not a home or garden, such as a park, including for exercise – *When is a garden not an outdoor setting? Also, plenty of people are lucky enough to have gardens bigger than some minor public parks!*

We must wait now until we have a vaccine – *What ever happened to the simpler days when a pint and a €9 euro sambo protected you against Covid?*

PS: What's the definition of a failed expert adviser? … one who becomes the story.

PPS: Just another thought … I've been pondering the consequences of a fire or an explosion across the water in Sellafield. Is there an expert advisory group in place to guide us? Perish the thought … no pun intended, really.



ALWAYS SOLID.
ALWAYS EFFICIENT.
ALWAYS INTELLIGENT.
NEVER AVERAGE.

PROUD PARTNER OF THE WORLD'S BEST INSTALLERS

There are average pumps, and there are Grundfos pumps. Built to improve any type of heating system, every circulator in the MAGNA range goes way beyond average, with intelligent control, exceptional efficiency and reliability, and easy installation. MAGNA pumps are adaptable to heating systems in apartment buildings, schools, hospitals and industry, and built to perform for years to come. No matter which MAGNA pump you choose, you know one thing – a MAGNA is never average.

Explore MAGNA at grundfos.ie

MAGNA1
THE SOLID CHOICE

MAGNA3
THE INTELLIGENT CHOICE

be
think
innovate

GRUNDFOS

Panasonic

CO_2 REFRIGERATION

Choose the green solution

Panasonic condensing units with natural refrigerant — for convenience stores, supermarkets, petrol stations and cold rooms

CO_2
R744

CO_2 natural refrigerant

ODP (Ozone Depletion Potential) = Zero and GWP (Global Warming Potential) = One. CO_2 refrigerant has negligable impact on the environment.

Energy savings

3.83: SEPR Cooling* - 1.92: SEPR Freezing*.
High seasonal efficient performance at medium or low temperature.

Flexible installation

Easy and quick installation thanks to a compact and light unit.
Long piping possibility up to 100 Metres**.

Reliable quality made in Japan

We offer compressor warranties of 5 years, and 2 year warranties on other components!

heating & cooling solutions | www.aircon.panasonic.ie

* SEPR values has been tested at 3-part laboratory. ** Applicable for OCU-CR1000VF8 and OCU-CR[illegible]VF8A